college
AND UNIVERSITY
business

SEPTEMBER 1956

Physical Plant Budgets

Dangers of Radiation Exposure

Proper Architect-Client Relationships

Guidance Plan for Men's Residence Hall

Food Cost Controls

SCIENCE BUILDING, GRACELAND COLLEGE, LAMONI, IOWA (page 28)

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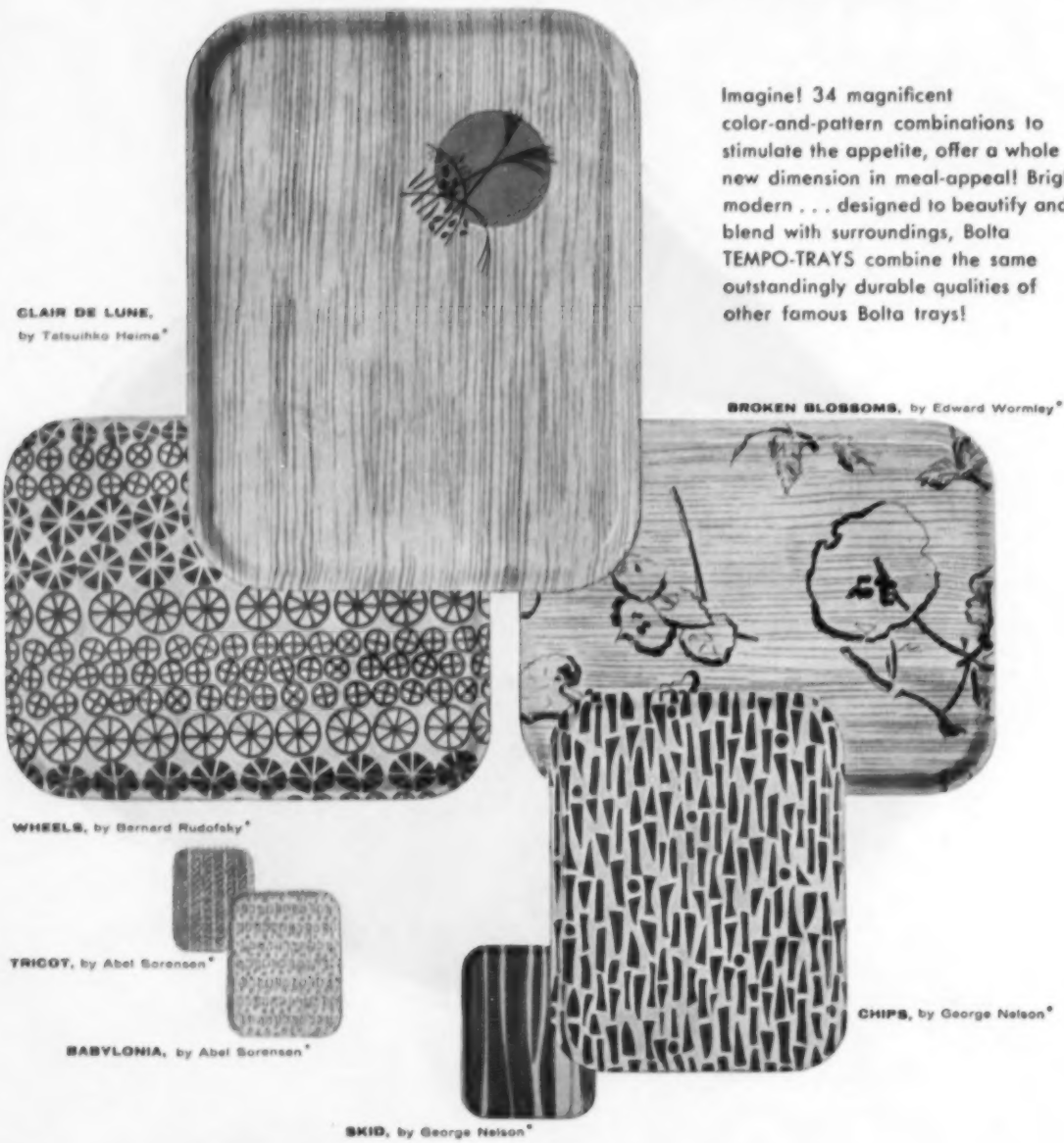

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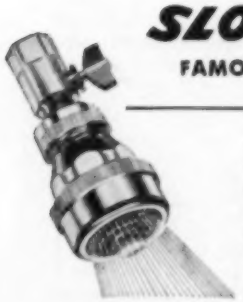

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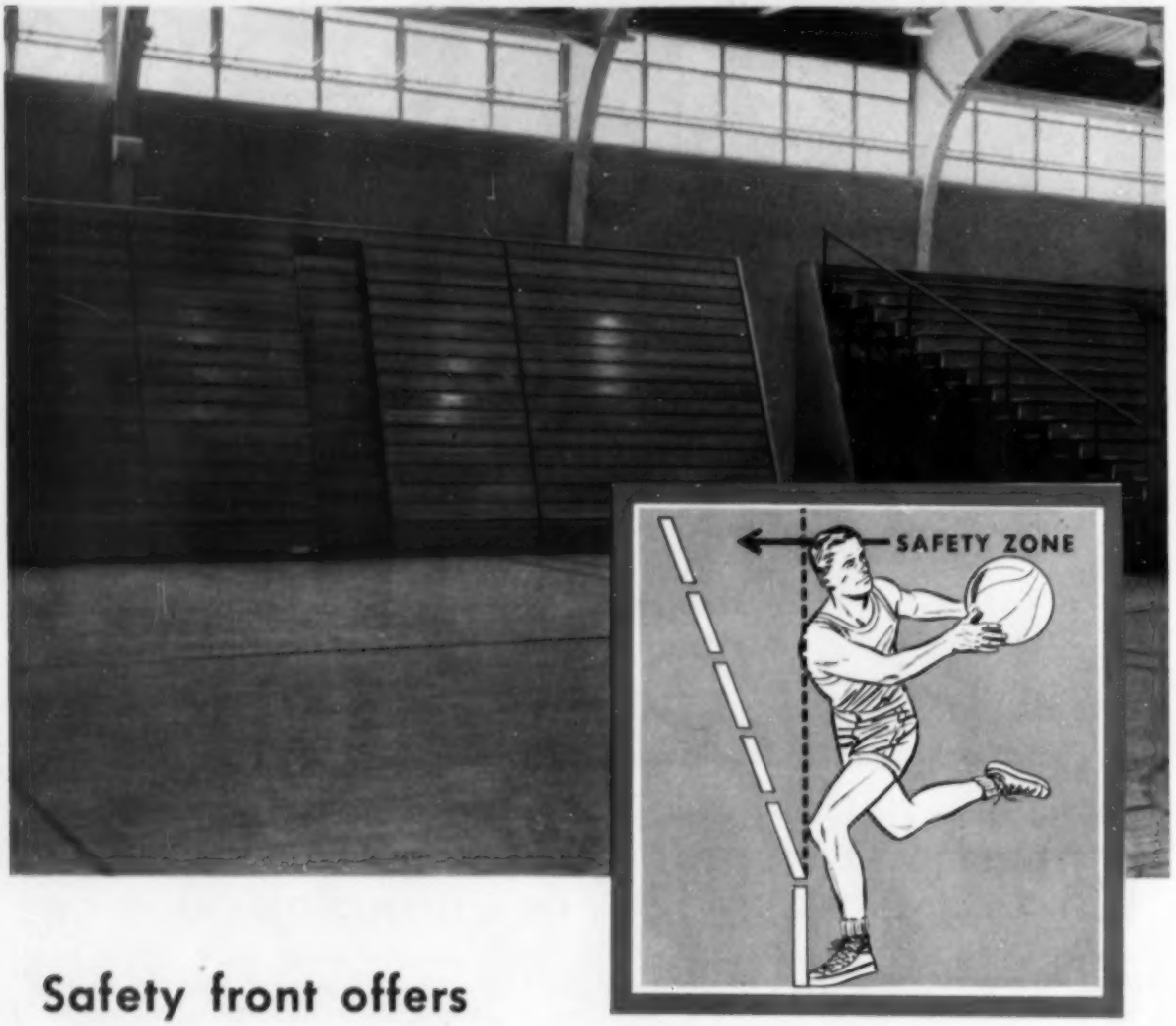

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Among the Authors

Albert E. Marien

ALBERT E. MARIEN, accountant in the auditing division of the University of Illinois, suggests on page 26 that college administrators not overlook opportunities to utilize their accounting system to give them the data and controls they need. Mr. Marien has been in accounting work since 1934, when he worked for a St. Louis hotel. From 1943 to 1947 he served as the head of the business administration department of Mount Berry College, Mount Berry, Ga. Since 1948 he has been a staff member at Illinois and has been in his present position since 1951.

Chester A. Berry

CHESTER A. BERRY, director of student activities at the University of Rhode Island, has developed theories on proper architect-client relationships, which he outlines on page 35. He has occupied his present position for nine years. Earlier he was associated with the Community Center at San Francisco for a year, following four and a half years as a navy officer during World War II. Prior to military service, he served for three years as a teacher and coach in Providence, R.I.

Elmer A. Grosshauser

ELMER A. GROSSHAUSER, assistant county superintendent of schools at San Luis Obispo, Calif., describes on page 47 what he believes to be a model plan for the organization and administration of a guidance program in men's residence halls. Mr. Grosshauser was for many years a member of the staff of the University of Colorado, where he became the first director of men's residence halls in 1946. The research on which his article is based covered a period of four years, during which time he had an opportunity to implement the guidance philosophy he outlines in the article. Mr. Grosshauser left the University of Colorado in 1953 to take his present position in San Luis Obispo.

Bruno Adams

BRUNO ADAMS, assistant director of food service for Northwestern University, received his degree in business administration from Northwestern. On page 52 he presents his suggestions as to the proper control of food costs. Mr. Adams began his food service career as a soda fountain man in high school and worked his way through college as fountain man, student manager, and second cook at the Evanston Y.M.C.A. During World War II, he helped set up the navy feeding program at Northwestern University and operated the cooks' and bakers' school. He served as commissary officer for the navy in the Pacific theater from August 1944 until April 1946, returning to Northwestern University when discharged. Mr. Adams is married and has two daughters, ages 11 and 13.

A THERMOSTAT IN EVERY ROOM

College of Southern Utah solves toughest problem in dormitory heating

NOW THE OCCUPANTS OF EACH ROOM CAN HAVE JUST THE HEAT THEY WANT

Shown above is a wing of the new men's dormitory, which houses 200 students in 50 apartment-type units —four men to each apartment. SelecTemp heating provides room-by-room temperature control.

Iron Fireman SelecTemp saved $14,000 in building costs

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Dale Nelson, Director of Public Relations, College of Southern Utah reports on SelecTemp:

"Of particular interest was the manner of solving the heating problem. Original plans called for a conventional heating system. However, to thermostatically control the heat of each apartment meant an additional outlay of $14,000.

"This problem was solved by the Iron Fireman Manufacturing Company, with its, at that time, revolutionary new steam heating system—SelecTemp—which placed thermostatic control in each room.

"We think you will be interested in knowing that in addition to installing the SelecTemp system in the men's dormitory, we have also removed the radiators from the Commons Building and the Gymnasium and installed SelecTemp heating there as well."

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QUESTIONS AND ANSWERS

Cooperative Planning

Question: In large metropolitan communities containing both publicly and privately supported universities, is there a basis for cooperative planning? If so, how is this to be accomplished?—I.T., S.D.

ANSWER: There is, very definitely, a basis for cooperative planning in large metropolitan communities containing both publicly and privately supported institutions. Both kinds of institutions are in business for the same purpose, namely, the education of youth. Both have the same kinds of problems, except that the major support comes in different ways. Each knows of, and should be sympathetic with, the problems, the ideals, and the methods of the other. There are more youth to educate than both, with present facilities and budgets, can accommodate. There is every reason why they should plan cooperatively. Unfortunately there is often the disinclination to do so.

How to go about accomplishing cooperative planning is mainly a matter of wanting to. Someone must take the lead, and others must be willing to participate. Selfish points of view and parochial interests must be submerged in a desire to face not just the institutional but the total problems of education.

For example, in the important area of fund support, there is a compatibility of interest. According to many recent surveys, the amount of money directed into channels of higher education from gifts and grants still is a relatively small per cent of the total resources that might be diverted to this important need. It is a joint responsibility of both institutions to make known the need for expanding educational requirements for our youth. Rather than competing we must be cooperating in order to provide a united front, which would have the effect of attracting greater interest and, in turn, greater support of funds from their respective sources.

Private and public institutions need each other. Private institutions tend to preserve the academic freedom so important to a democratic world and to the learning process. Public institutions must become a major means of helping to meet the ever increasing need of expanding educational facilities for our growing population.—GEORGE F. BAUGHMAN, *business manager, New York University.*

Workmen's Compensation

Question: What is considered to be an ideal plan of workmen's compensation and what classification of employes should be covered under the plan?—A.E., Ky.

ANSWER No. 1: I presume that your question refers to compensation of employes for accidental injuries incurred in the course of their employment.

The scale of compensation and the employes covered are governed by state statute. I would suggest that you request your attorney to give you a copy of the statute, and that you obtain workmen's compensation insurance protection to cover the liability imposed by this statute.

Please refer to pages 43-44 and 91-92 of the second volume of "College and University Business Administration," published by the American Council on Education, Washington, D.C.—T. E. BLACKWELL, *vice chancellor and treasurer, Washington University, St. Louis.*

ANSWER No. 2: I am not familiar with the details of the Kentucky statute covering workmen's compensation; hence I am not sure whether the institution served by the inquirer is legally covered. If it is legally covered, then the answer is self-evident—the employer should conform to the terms of the statute.

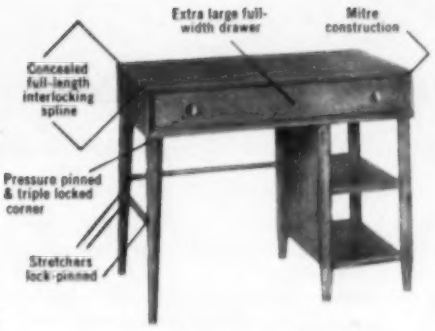
If it is not legally covered, then I would suggest that every effort be made to provide on a voluntary basis the same benefits that are provided by law to employers who are covered. Information on this matter could be procured from a review of the applicable statute. Generally speaking, workmen's compensation provides certain limited payments for loss of time because of disability incurred by accidents or occupational diseases while in the course of employment by the covered employer. These amounts usually are not equal to the actual salary involved and normally are considerably less. There are, furthermore, certain specific items available for permanent disability of a partial or total nature growing out of the occupational causes.

It usually is considered equitable in the case of nonpermanent disability for the employer to supplement the workmen's compensation payment with enough additional money to provide for meeting in full the institutional policy with reference to disability leave and, on the other hand, to extend the total amount of disability leave available by the amount called for under the workmen's compensation statutes.

Specifically, a man receiving under workmen's compensation $25 a week, entitled to two weeks' sick leave based on a pay schedule of $50 a week, would thereby have his right to receive pay on the total basis of $50 each week extended to a maximum period of three weeks. Beyond that time, the workmen's compensation payment of $25 would continue for the term provided by law.

Most states provide in the law the type of employes to be covered. Here, generally speaking, the educational employer should take a broad view since few of the state laws are written with educational institutions specifically in mind. The main effort here should be to provide essential fairness and equity for all members of the staff alike—student, faculty or nonacademic.—DONALD E. DICKASON, *executive secretary, C.U.P.A.*

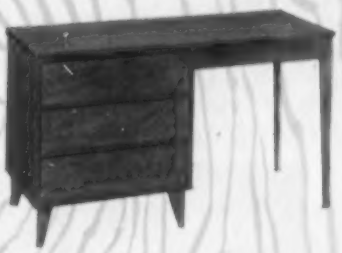
If you have a question on business or departmental administration that you would like to have answered, send your query to COLLEGE and UNIVERSITY BUSINESS, 919 North Michigan Avenue, Chicago 11, Ill. Questions will be forwarded to leaders in appropriate college and university fields for authoritative replies. Answers will be published in forthcoming issues. No answers will be handled through correspondence.



Typical construction features of Carrom wood furniture

Why wood furniture?

Only wood furniture has warm beauty combined with lasting durability. Wood is pleasant to touch, rich in appearance, easy to keep clean and polished. Wood takes heavy punishment. It is difficult to mar, scratch or dent and will outlast other materials many times over. Wood is beautiful. Wood is economical.



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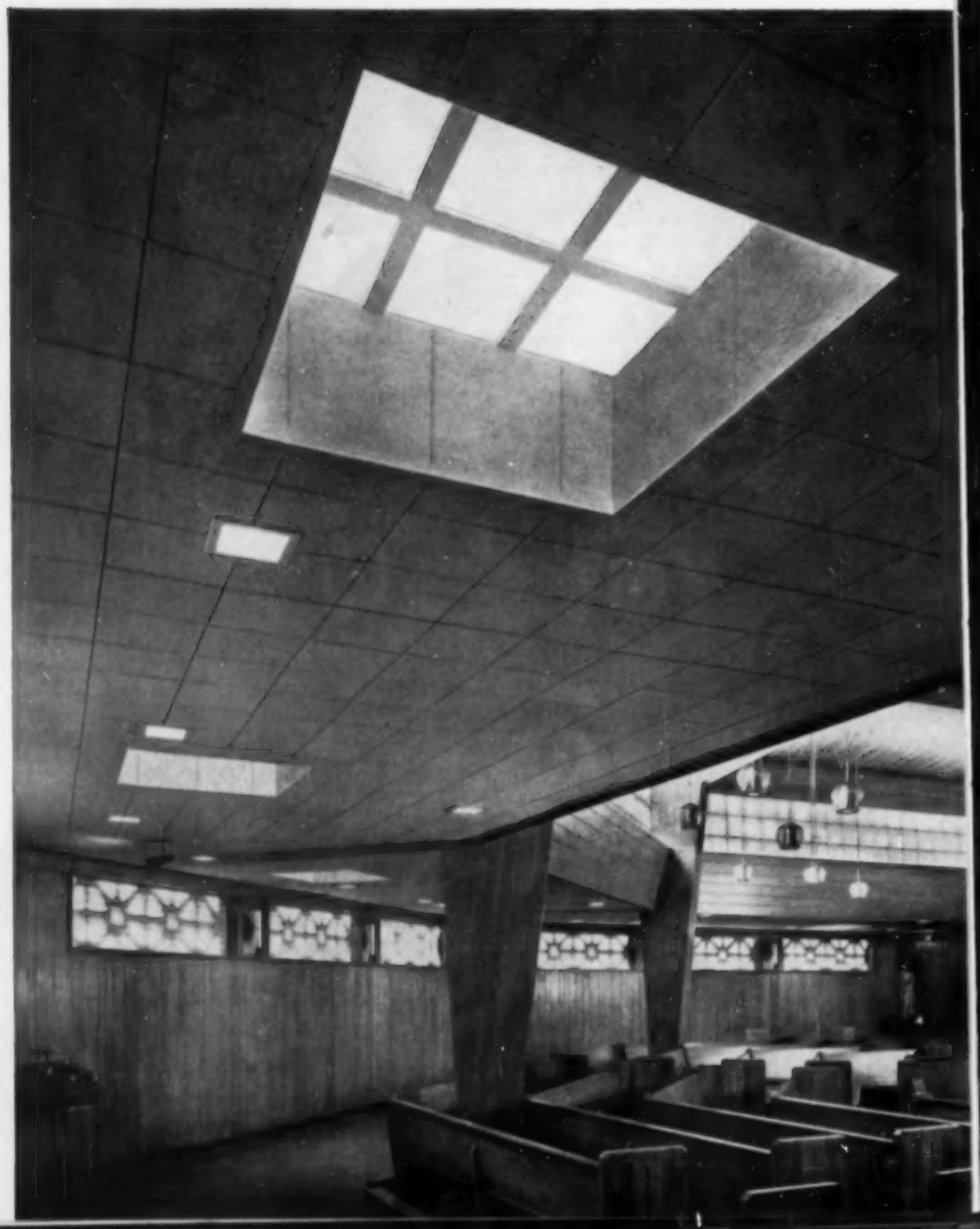
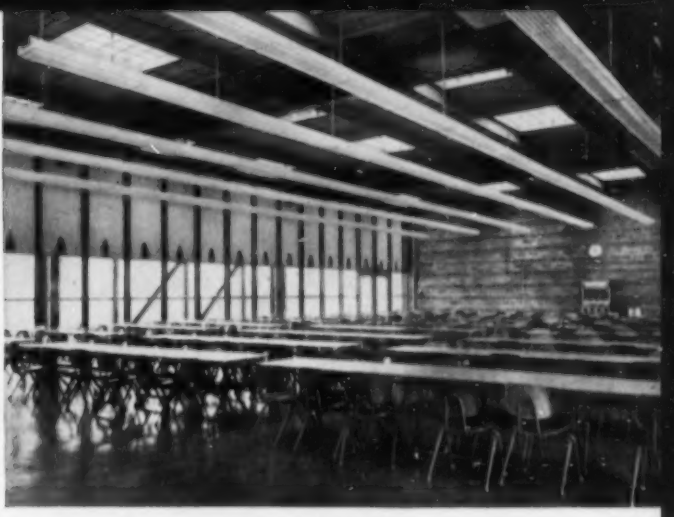


NEW YORK

O-I Toplite and Glass Block team floods this handsome chapel with shadowless, well-distributed and diffused daylight. Marian College, Poughkeepsie. Ashton, Huntress and Pratt Associates, Lawrence, Massachusetts, architects.

WASHINGTON

The interior of this dental laboratory is well lighted because light-directing glass block direct light up and diffuse it over the entire room. University of Washington, School of Health and Sciences, Seattle. Naramore, Bain, Brady and Johanson, architects.



CALIFORNIA

Toplite Panels provide sufficient daylighting during normal days for this entire "all-purpose" room without need for artificial lighting. Glare and heat of old-fashioned skylights are eliminated. Hillsdale School, San Mateo. John Lyon Reid and Partners, architect-engineers.

WISCONSIN

Owens-Illinois Glass Block panels and vision strip windows form a rich, rhythmic beauty for the façade (below). Inside this experimental center (right), this combination keeps brightness at comfortable levels, provides excellent vision and ventilation. University of Wisconsin, Babcock Hall, Madison. Grassold and Johnson, Milwaukee, Wisconsin, architects.

All over America . . .

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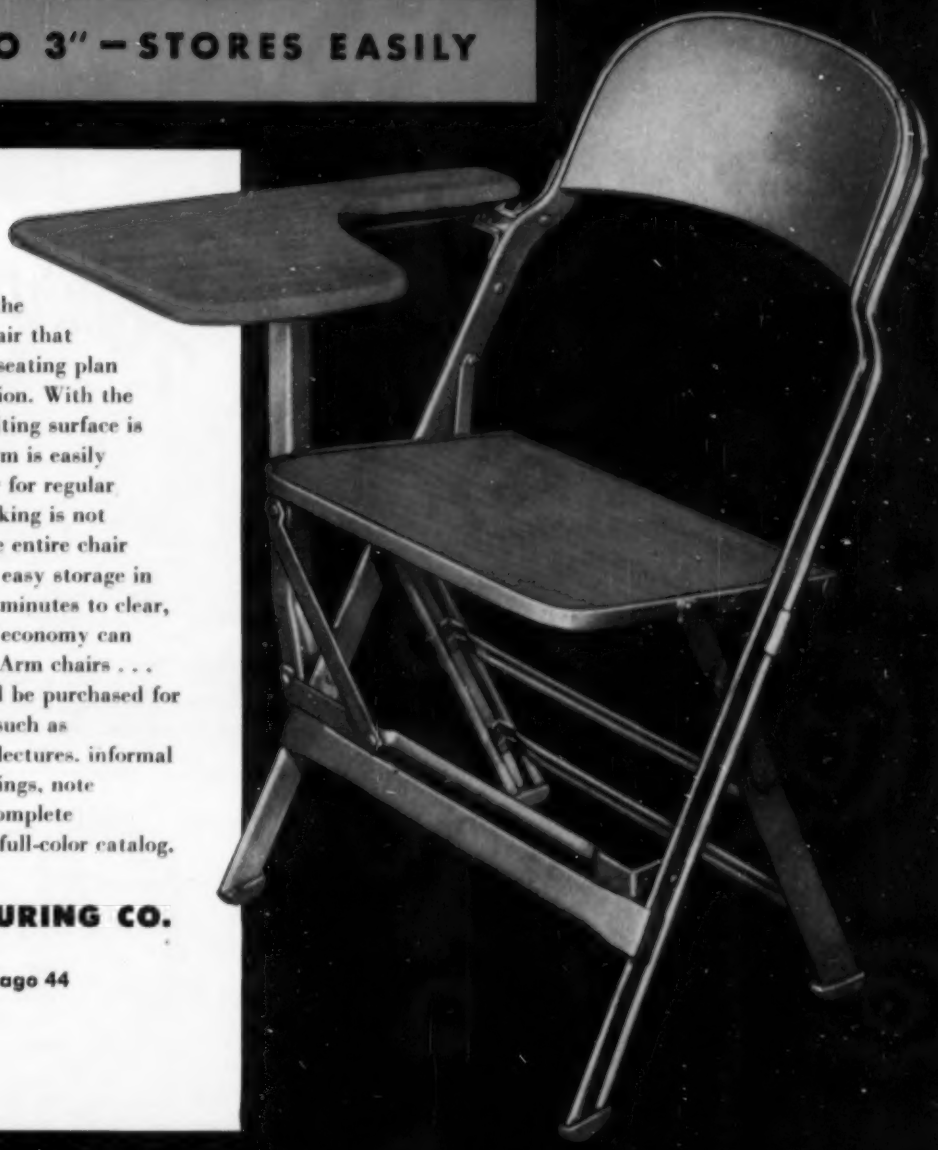

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Fairhurst installation at Wellesley College, Wellesley, Mass. Architect: Coolidge, Shepley, Bulfinch & Abbott. Lower view: Units partly open.

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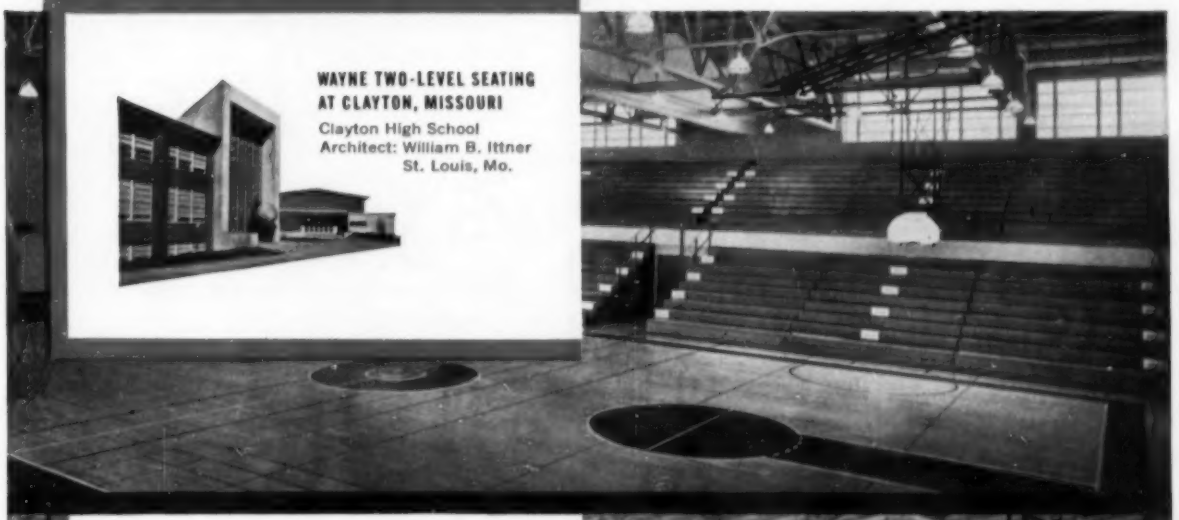

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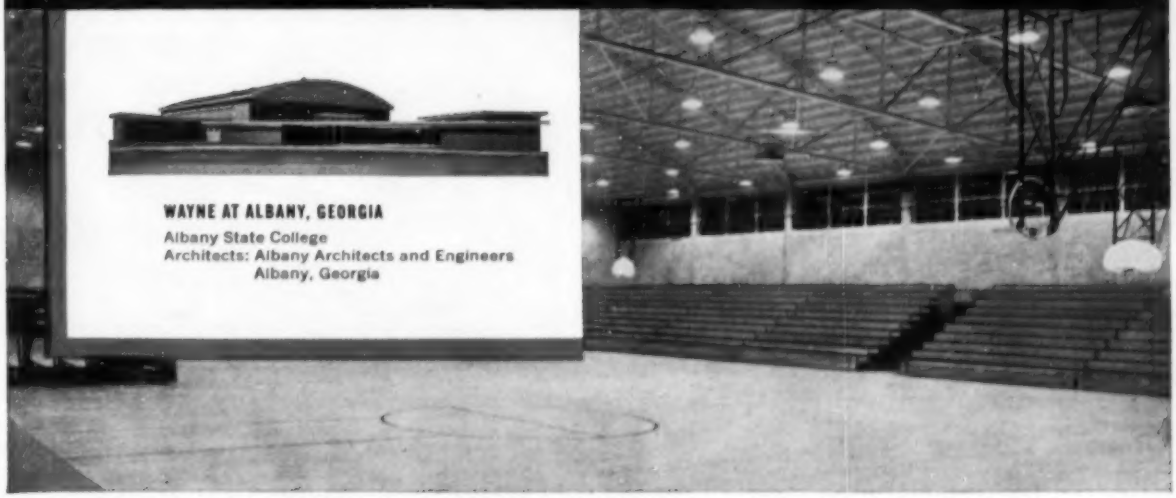

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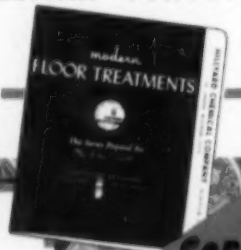

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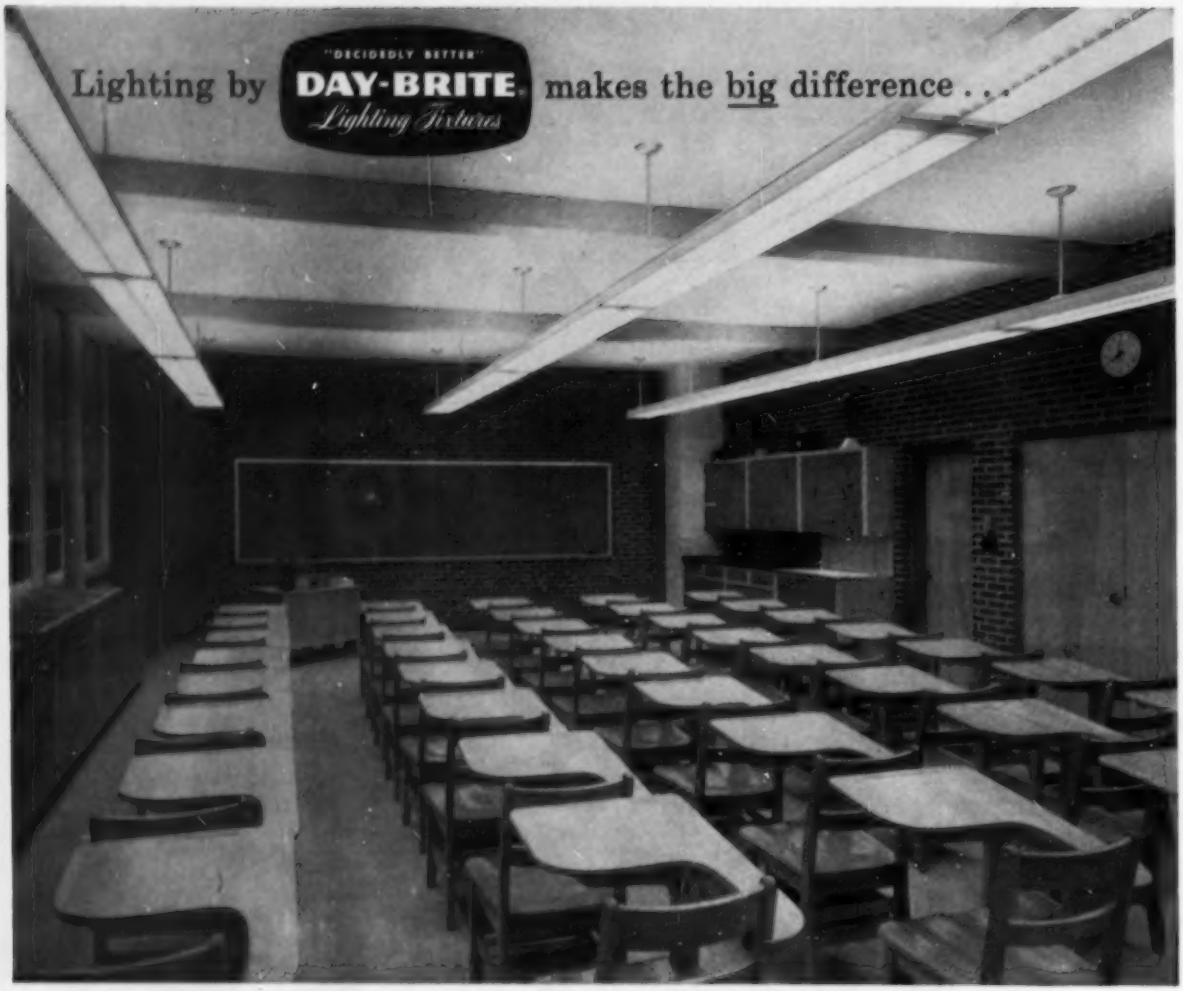

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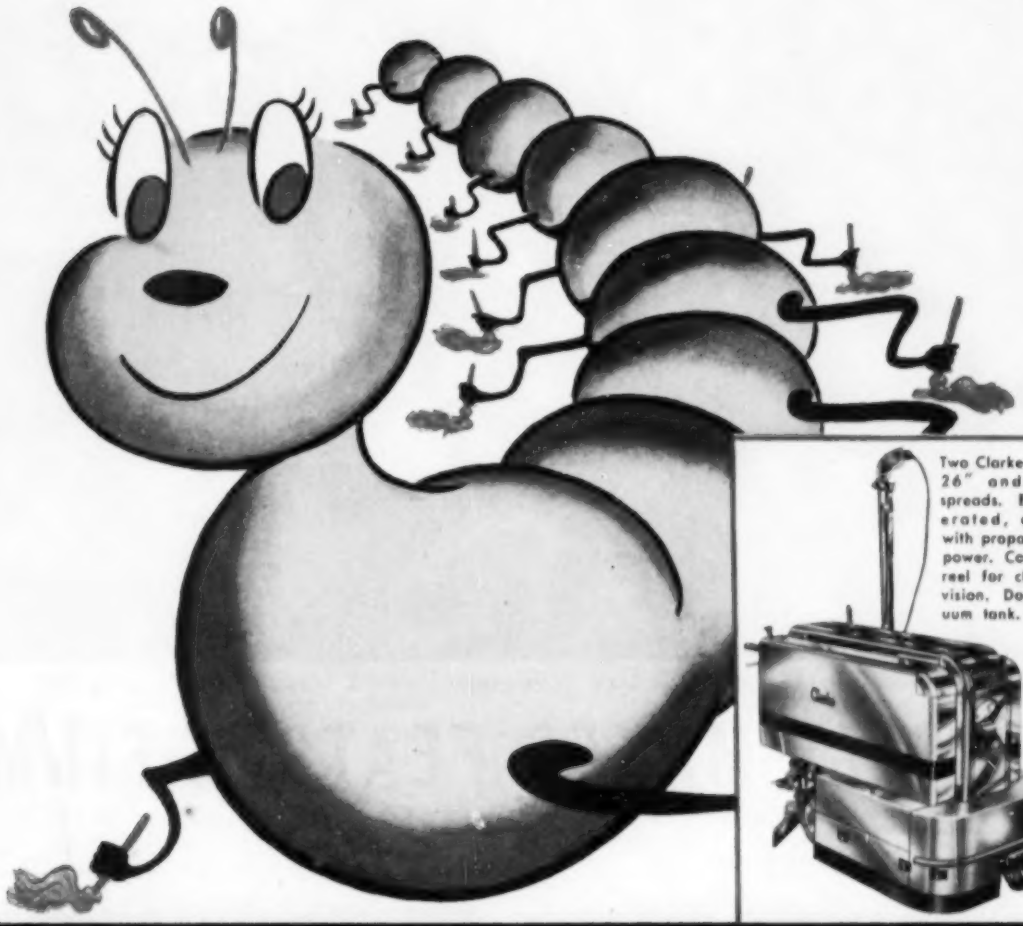

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G U E S T E D I T O R I A L

The College Faculty Crisis— What Colleges Can Do About It

WILLIAM G. VAN NOTE

President, Clarkson College of Technology, Potsdam, N.Y.

SO MUCH HAS BEEN READ AND HEARD—AND TOO often experienced—by college administrators on the faculty shortage crisis that we are prone to believe all the world appreciates our plight. Perhaps so. Yet, too often, continuing association with a circumstance leads us to assume it is common knowledge, when actually it is not. Whatever else colleges can do to lessen the problem, we should continue to publicize it vigorously. Solution lies in part in wide public knowledge of the faculty shortage and equally wide acceptance of national urgency for its solution.

The basic problem is that faculty salaries are too low. The difference between what the colleges think they can pay and what industry will pay is greater than the value the professor places on the advantages of college faculty living.

Generally, comments on this problem are limited to the need for outside financial help and an inability of the colleges to do anything more themselves except beg.

This is probably all too true, but before we beg we had better first examine our own houses and see if we are doing all we can within. When we are, it puts us in a much better position to ask for aid.

In presenting our case, let's be totally honest about our program and relative values within it. Colleges today contribute widely to national entertainment through intercollegiate athletics. It is accepted by many administrations as a college obligation. If we wish to pay the athletic coach more than the department head, if the athletic scholarship is more valuable than that for the nonathlete, let's say so or say it's not so. Many think it is.

Efficiency in teaching can be examined—and perhaps improved. Education is being outbid for services by industry, which is constantly increasing its production per worker over an 11½ month year and is charging full costs of operation, compared to education's scant nine months of operation, little or no change in methods, and its charge of less than costs.

Let's examine the "sacred cow" of faculty-student ratio. Is the college with the lowest ratio doing the best educational job? I sometimes doubt it, especially in noting how frequently large freshman classes and laboratories are taught by graduate assistants. This means that those most in need of the expert and experienced teachers are handed over to those least able and least interested in teaching. The "big names" are reserved for the graduate students, for research, and for the publicity department!

Another way we can help ourselves is to reward on merit and not on seniority. Those administrators who now have a timetable which, coupled with degrees, defines what a man will earn at a given period in his career should throw such a timetable away.

Though the foregoing suggestions may hold some promise, the lasting and complete solution to our problem of faculty crisis does not lie in them. A basic necessity to the solution of our problem demands that education develop a system of financing that at least provides a sum sufficient to cover its full operating costs. This suggests finding out what it costs to do the job, using salaries that will recruit and hold skilled career faculty, developing methods to use such faculty most effectively without regard to ancient tradition or customs, and then charging tuition sufficient to pay for such an operation.

Does this suggest tuition costs that will prohibit many worthy youngsters from attending college? It does not. On the proposed method the student can be charged a tuition sufficient to meet the full cost of education and can pay only a portion of it, an amount similar to today's tuition. The difference can be paid by (a) student notes to be paid in some specified time after leaving college, (b) state or federal scholarships applicable to the college of his choice, or (c) the student's obtaining money from a future employer, through an agreement involving summer and future permanent employment or freedom from obligation through repayment.

Such a program will harm nobody. The student enters college to prepare for financial earnings far in excess of his probability without entrance. Industry can have an association leading to obtaining an employe upon graduation, something it is dearly seeking today without too good a plan. If neither student nor industry chooses to supply tuition money, the taxpayer is going to have to do it, like it or not. This suggestion will permit him to do so far more efficiently than will any other alternative.

LOOKING FORWARD

Self-Improvement

IT IS ENCOURAGING TO NOTE THE ENTHUSIASTIC response of college executives to short-term intensive programs for the improvement of professional competence.

Two recent workshops on college business management—at the University of Omaha and the University of Kentucky—attracted record enrollments. More than 170 college administrators from 40 states, Puerto Rico and Japan were in attendance at Omaha alone. Last spring a successful purchasing institute was presented at Robert Allerton Park, University of Illinois, under sponsorship of the National Association of Educational Buyers. In recent weeks a food service institute under sponsorship of COLLEGE AND UNIVERSITY BUSINESS, in cooperation with Northwestern University and the University of Chicago, enrolled 130 delegates from 29 states and Canada for a three-day meeting.

It is heartening to those connected with planning the future of higher education to note the enthusiasm with which college administrators seize upon opportunities offering possibilities for professional growth. There has been too much hit-and-miss recruiting and training of college executive personnel. The various intensive short course offerings should help compensate for a lack of an organized full-time program to train college executives.

Top level administrators would be well advised to arrange for their associates to attend and participate in professional workshops and institutes. Such a policy profits both institution and individual.

Proper Perspective

THERE IS A LOT OF TALK THESE DAYS ABOUT THE importance of training scientists and engineers. The implication is that we are falling behind in a grim race with the Russians.

Dr. Lee DuBridge, president of California Institute of Technology, says in effect—"so what?" He goes on to point out that "it is true that in Russia more men and women received degrees in science and engineering than in the United States," but he raises a question as to whether this was because the Russians have neglected the sciences for the last hundred years. "If this is true, then our rate of production should not be determined by their weaknesses, only by our own."

Sound appraisal of needs and resources in regard to our nation's backlog of scientific personnel is more intelligent than yielding to the hysteria of those who would out-rush the Russians. Dr. DuBridge's comments point up the importance of careful analysis rather than getting involved in a numbers game.

Fred M. Hechinger, education editor of the *New York Herald Tribune*, writing in the July issue of *Educational Record*, published by the American Council on Education, gives expression to views similar to those of Dr. DuBridge. Mr. Hechinger spent a week with Russia's deputy minister of education and reached the conclusion that "something in Russia is lacking amid all the competence. . . . The children and the adolescents and the experts who will grow up without that something—the independence that permits minds to soar—will be as deficient in the long run of history as though they had lacked an essential vitamin in their intellectual diet."

These observations by competent observers suggest that the way to solve educational problems and to meet challenges is by not losing our heads and being swept along on a wave of confusion, but rather to sit down quietly and think things through. It is pretty good advice—and long overdue.

Overhead Rates for Research

COLLEGE AND UNIVERSITY ADMINISTRATORS WHO meet with representatives of the federal government to negotiate research and development contracts frequently find many thorny areas of controversy. In recent years the determination as to overhead rates has been the issue on which many negotiations have reached a deadlock.

Sidney Rivkin's thesis for a master's degree at New York University on determination of overhead rates at educational institutions performing government research and development contracts is a helpful and comprehensive review of the history of such contract negotiations and the principles involved. To quote C. C. DeLong, bursar of the University of Illinois: "The principal contribution of this dissertation is that it brings together for the first time a great deal of information and source material relative to the problem of indirect costs which were formerly widely scattered and difficult, if not impossible, to obtain."

The problem of determining overhead rates for research contracts is primarily a concern of large universities and colleges. The principle of who should pay, and how much, however, hits at the very core of higher education and thus equitable settlement of such negotiations has an impact on all because of the philosophy involved. A study of Mr. Rivkin's thesis should aid administrators in dealing with the complexities of contract negotiations on government research contracts.

Monitoring new dental x-ray facilities before opening.

Moral and legal responsibilities of university officials in regard to exposure of personnel to

RADIATION

TOM S. GABLE
Public Health Engineer, University of Nebraska

RADIATION, ITS ATTENDANT PROBlems and hazards, is not a new field. Such pioneer scientists as Curie, Becquerel, Grubber and others reported cases of dermatitis, epilation and other injuries that were traceable to radiation even prior to 1900.

The National Bureau of Standards in 1929 undertook the standardization of radium for medical uses and subsequently organized the Advisory Committee on X-Ray and Radium Protection (now known as the National Committee on Radium Protection). A decade later, the discovery of nuclear fission, followed by the development of the atomic pile in 1942 by Fermi and the subsequent utilization of atomic energy for military and research purposes, more firmly than ever established the need for radiological protection. However, only after 1946 and the establishment of the Atomic Energy Commission was the full and complete impact of radiation felt.

To indicate the extent of the radiological health and safety problem today, it is useful to outline some of the current sources of radiation. There are in the United States some 150,000 x-ray units in use. In the operation of these units, approximately 300,000 medical or technical workers are potentially exposed to radiation.

Also of significance in radiation are the naturally occurring radiation sources, particularly radium. Today in the world there is a supply of refined radium amounting to approximately five pounds, or 2500 curies. Greater yet in significance today is man-made radioactivity. Since the first radioisotope shipment by the Atomic Energy Commission in August of 1946, until Jan. 1, 1955, the commission has distributed better than 25,000 curies of radioactivity to more than 2400 installations. It is estimated that 10,000 medical and other technical personnel is involved in the use of these isotopes.

RADIATION CRITICAL PROBLEM

Accurate determination as to the extent of exposure of personnel to radiation is most difficult. However, as a guide, a three weeks' survey conducted in 1949 indicated that about 3 per cent of the medical x-ray personnel received exposures over the maximum permissible dosage. The same year, a nine months' survey indicated that of personnel in x-ray departments about 0.4 per cent exceeded this value. Perhaps even of greater significance is a report published in 1951 in which it is indicated that over a 20 year period, 1930 to 1950, incidents of leukemia for radiological specialists were some nine times higher than for the rest of the medical profession. No comparable information or surveys have been conducted in the area of personnel utilizing isotopes. However, it can be estimated that exposure is somewhat less. Regardless, with the increase of personnel involved, radiation today is a critical problem.

Perhaps the most frustrating factor involved in radiation protection is the fact that the bombardment of the body by excess quantities of radiation may give no immediate warning of the hazard to the worker, the harmful effects of radiation exposure not becoming manifest for many years following the exposure. In addition, many research scientists, while ably qualified in specific areas, do not have a thorough working knowledge of radiation and its effects. Yet, because radiation is so useful in the field of research, many attempt its utilization regardless. In view of these facts, the importance of an effective protective program wherever radiation emitters are used is obvious.

Can a university, its faculty, administration and research scientists utilize radiation effectively and safely? That such can be accomplished is evidenced by the health and safety records of the Atomic Energy Commission's installations throughout the country. In addition, certain institutions have been using radiation emitters with similar satisfactory experiences. Any discussion should first consider the Atomic Energy Commission's program.

The Atomic Energy Commission maintains an isotopes division within the commission with the primary objective of radiological safety. This division handles the licensing of isotope users, licenses being issued only after applications are reviewed carefully to determine that the applicant has adequate training, facilities and equipment to provide for radiological safety.

In addition, the division conducts an educational program and makes rou-

tine visits to the users' laboratories. The importance of radiological safety in the commission program is indicated by the fact that actual visitation and radiological safety activities are performed by a special radiological safety branch.

Supplementary to the Atomic Energy Commission's program of licensing, education and visitations, a few states already have established state statutes governing the procurement, utilization and storage of radioactive materials. Owing to the health implications of radiation emitters, the Atomic Energy Commission has deemed it advisable to work closely with state health departments throughout the nation.

It has been said that the problem of protection against hazards associated with radioactive materials occurring naturally, produced artificially, or from radiation generating devices can best be met through the cooperation of federal and state agencies concerned with the protection of the health of the public. However, such a statement does not exempt the individual user of radiation of a legal and moral responsibility in the protection of fellow workers or employes. Thus, a university or college with staff research scientists utilizing radiation is held legally responsible for their health and safety.

In the development of a radiological health program, the basic tenet for the program should be that *radiation can be safely used if proper precautionary measures are followed.* This basic tenet indicates that utilization of radiation is feasible and is encouraged within the institution provided certain guards are utilized.

A second basic principle of a radiological health program is that, like any safety program, *the services must meet users' needs.* The services that are offered must be such that they will fit the program and give the most efficient operational procedure and at the same time provide basic information regarding the safety of those working with radiation.

Third, *education and instruction are fundamental to the program;* the need to instruct the users of radioactive materials in the correct procedures before they have had time to acquire bad habits is only one indication of the importance of an orientation and training program.

Finally, *use compulsion sparingly.* While it may be necessary at times to use procedures of the enforcement type to effect the correction of radiological hazards, it should be borne in mind that education is the far better tool and that compulsion should be used sparingly.

The implementation of these basic principles is also of concern to the institution's administrator. Certain professional jealousies, competencies and idiosyncrasies must be considered.

UNIVERSITYWIDE COVERAGE

Coverage of a radiological health program must be universitywide; it must include students, faculties and administrative staffs as well as maintenance and operational personnel. Second, an administrative location that permits the full utilization of presently available medical personnel and that assures medical concern and interpretation of exposures is essential. Third, it is a program that requires complete coverage of all university facilities that now or may in the future house radiation emitters.

In view of this, it seems ineffective to place the responsibility in the hands of one of the academic departments wherein departmental jealousies, politics and relationships may be crucial. Thus the logical location is an operating unit of the university and with medical direction. In most institutions only one such unit exists—the university or student health service. While many administrators may question the assignment of radiological health to the health service of the institution, it should be pointed out that radiological health safety programs consist of both safety and medical aspects, and a close, routine coordination of such facets is imperative if the program is to be efficient and effective.

Another fallacy in the operation of radiological health programs has been the establishment of an isotope committee with the responsibility of field activities. The development of an isotope committee or a radiological health and safety advisory committee within the institution is desirable. However, this group should not be charged with operational responsibility but rather should be established as an advisory group to the operating unit. Such a committee provides for modification of individual and departmental idiosyncrasies and jealousies and for the clarification of departmental relationships. This procedure has been found effective in nearly all institutions that have attempted it.

To whom should the specific responsibility for the radiological health program be assigned? This question, of course, depends on the degree of utilization of radiation emitters. Should the utilization of radiation emitters be of such a degree as to require a full-time employe to implement and carry out the radiological health program, it is firmly recommended that one specially trained in the area of radiological health and radiation be employed.

This does not imply that a person qualified in research need be retained but rather someone competent in, and fully conscious of, the health implications of radiation. Health physicists, however desirable, are few and far between. Thus, many times someone with lesser training must be sought. The Atomic Energy Commission presently is conducting a training program of from one to two years. The graduates from these programs are competent individuals and should be

Shown here is the dental x-ray housing being checked for leakage.

Monitoring of laboratory spill. Provision must be made for routine monitoring procedures to be carried out by agency responsible for administration of the program, monitoring to be in addition to that routinely carried on by research personnel.

considered for employment in such a program. Many times physicists, who by additional training or by study have acquired sufficient knowledge in this field, are available. Engineers and other scientists also may be found who are qualified to carry out such programs.

It should be noted that no specific standard or requirement can be set for such competency at this time. The rapid increase in the utilization of radioisotopes and radiation emitters, coupled with the lack of previous academic pursuits in this field, make individuals with specific training in this area rare. Many times presently employed individuals may acquire specialized training in this field, and this may prove feasible not only when part-time personnel is required but also when a full-time specialist is needed. Special training programs have been established by the U.S. Public Health Service and the Atomic Energy Commission.

Another question many times raised by administrators is the problem of the coverage or scope of the program. Two basic approaches are possible in the development of a radiological health program—specification or performance. In a program based upon specification, it is necessary to set down definite radiological health and safety regulations having effects of law. This procedure requires routine policing and enforcement. The second procedure, that of performance, establishes general over-all operational procedures and relies heavily upon the educational approach to maintain minimum performance standards. It is the latter method that is used principally by the Atomic Energy Commission and by other individuals and groups concerned with radiological health, such specifications as may be necessary being obtained by reference to the National Bureau of Standards handbooks relating to radiation emitters. The coverage must be universitywide, and all types of emitters, of course, must be included if a total radiological health program is to be operated.

MANUAL IMPORTANT TOOL

It is generally considered important to have as a procedural tool, as well as an educational device, a manual in which an authority for the program, the general organizational structure, and performance provisions are enumerated. This manual provides a readily available tool for all employes and particularly for new employes. Several universities and colleges already have available such manuals. Perhaps the most outstanding is that of the University of California. Such a manual should cover responsibilities of supervisors of research projects, the unit charged with the program responsibility, and the administration.

Provision must be made for routine monitoring procedures to be carried out by the agency responsible for the administration of the program, the monitoring to be in addition to that routinely carried out by the research personnel. Such a procedure provides a check on instrumentation as well as objective analysis of practices and procedures within the research project.

Specific channels for the procurement and distribution of isotopes, as well as final disposal, must be established in order to safeguard users and others. It is recommended that a specific channel also be established for the development of new isotope or radiation facilities in order that safeguards may be established during the planning and construction periods. General requirements as to medical examination and medical records also should be detailed. Personnel monitoring should be established on a centralized basis to provide for the economy of single purchase and to permit the maintenance of individual radiation exposure records on an institutional basis.

In summary, it can be said that the future use of radiation emitters will without doubt continue to expand, and the problems of universities and colleges with regard to radiological health and safety will become more complex. It is strongly recommended that administrative officials of universities and colleges take cognizance of their moral and legal responsibilities in this regard and that they consider the immediate development and implementation of a radiological health program.

Don't miss any bets
in failing to apply familiar auditing technics

Auditing—by the Diagrammatic Method

A. E. MARIEN
Internal Auditing Division, University of Illinois

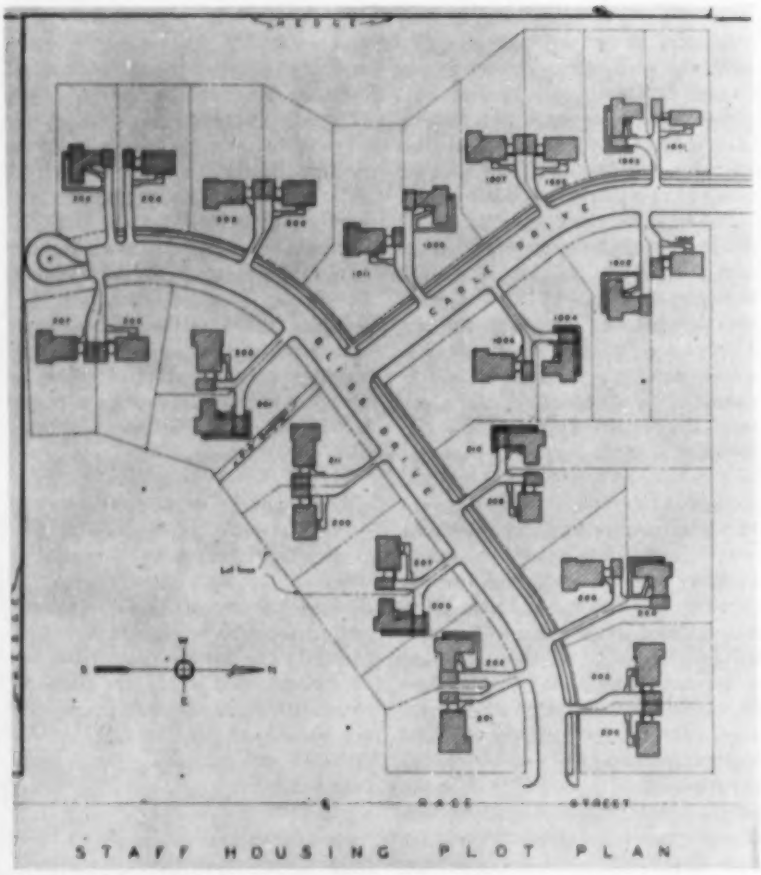
Part 1 of a two-part series

A TWO-ARTICLE SERIES ON THE FOUR over-all auditing technics of the reconcilement, the confirmation or verification, the physical count, and the review of internal control appeared in the May 1954 and the March 1955 issues, respectively, of COLLEGE AND UNIVERSITY BUSINESS. This article is the first of another two-article series on the same general topic but dealing with audit technics of a more specific nature. They are the diagrammatic and "open-mouthed" technics of auditing. This treatise is devoted entirely to the diagrammatic method and lesser-used applications of this familiar technic.

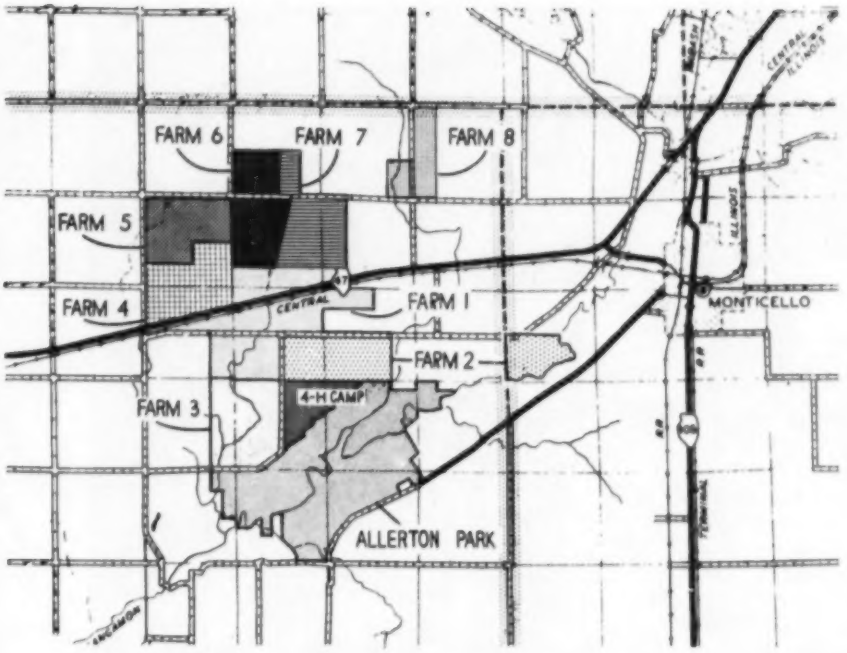
An important phase of auditing, of course, is to review recorded figures and/or data along with their interrelationships in order to construct improvements in procedure or internal control, corrections and recovery of loss caused by some element of fraud. A complete definition of auditing is "an exploratory, critical review by an . . . accountant, of the underlying internal controls and accounting records of an . . . economic unit, precedent to the expression by him of an opinion. . . ."[1] Phrases not especially applicable to internal auditing were omitted.

Four internal audits at the University of Illinois illustrate the diagrammatic technic. Two of them concern the asset land; two are on housing

[1]Kohler, Eric L.: Auditing, p. 10.



The University of Illinois' Race and Florida Project. The diagram shows 15 faculty homes available for rental. The number renting at each of three different rates was clearly determined on the diagram. For instance, the five homes leasing for the highest monthly rental rate were those on the diagrams with a greater square footage and those having more bedroom space.



Map of the Allerton estate, given to the University of Illinois in 1946. The estate comprises 5519 acres of land and is located 30 miles from the campus.

operations. Because of the no-depreciation principle of governmental accounting, a close reexamination of physical assets other than equipment often is not employed.

In order to give more emphasis to this segment of the auditing program, however, one of the aforementioned land audits was a thorough five-year examination of land acquisitions and dispositions; the other was a verification of the deed and boundaries of a large estate given to the University of Illinois in 1946 by Robert Allerton. The estate comprises some 5519 acres of land and is located 30 miles from the campus. Approximately two-thirds of the total acreage is farm land, the income of which is used to maintain and operate, wholly, Robert Allerton Park, and, partially, the main house located in the park. The public park and a 4-H camp constitute the remaining one-third of the acreage.

The main house and its immediate surroundings are used extensively by the university for conferences, institutes and special activities. One of the housing audits verified rental income from a faculty residential housing area known as the Race and Florida Project. The other housing audit considered the operation of a lunch counter centrally located in the men's residence halls section of the campus.

In the analysis of the land account, an important step in the audit procedure was to check the legal descriptions on the deeds for land acquisitions with descriptions in the land register. In the case of a variance between the records, or especially, in the case of an unrevealed identical error in both records, a cross-check was needed. Application of the diagrammatic technic provided the necessary control for adequate checking. In addition, assurance was obtained that land descriptions were logical and that contiguous acquisitions properly fitted together.

City property was plotted according to legal description on a Champaign County, Illinois, atlas; farm property was plotted on county detail maps or on section paper. Certain experimental farm properties and all trust farms were then plotted in farm plat books.

In the plotting of city property acquired, several discrepancies or errors were quickly ascertained. After diagramming on the atlas a purchase from a public utility of three parcels of land which it was believed would form a contiguous strip when considered with prior purchases that, also, were diagrammed, it was found that the university did not have title to a 40 by 66 foot strip of land at the head of a closed street and separating the land acquired. Furthermore, the diagram made very obvious an acreage shortage in the Land Register.

A variance between the Land Register and a deed for another acquisition in the city was verified by plotting the deed description. The variance was in the foot-frontage of the property, caused by the omission of a figure in a "strawman" negotiation with the grantor before conveyance to the university. After substantiation of this error by the diagrammatic technic together with an inspection of the abstract, a corrected deed was obtained. Detection of the error now, while the grantor was still living and his signature to the corrected deed could be requested, assured the university of avoiding trouble at a later time.

The second audit in which the diagrammatic technic was applied was the land audit of the large estate that was given to the University of Illinois by Mr. Allerton. The central problem of the audit was one of boundaries for the park area of the estate. The lengthy legal description of the deed was diagrammed on a general highway county map obtained from the bureau of highway research of the Division of Highways for the state of Illinois. Since the size of the estate (the tract had a 45,125 foot boundary) called for extreme accuracy in the audit, the following outside maps were utilized for comparative purposes: other county maps, contour and boundary maps prepared by the civil engineering department of the university, and aerial photographic maps prepared by the U.S. Government.

Points of apparent variation in the legal descriptions as plotted on the various maps were further checked by a field inspection. By the comparative diagrammatic processes supplemented with a field visit, two questionable portions of the long boundary were accurately ascertained. Tabular data prepared by the civil engineering department of the university corroborated the finding.

A beneficial by-product of the diagrammatic technic employed in this audit was production of the first map showing the whole Robert Allerton gift. The college of agriculture had maps of the farms and the park management had maps of its so-called "woodland tract," but neither had a map of the entire estate.

The diagrammatic method was applied successfully, also, to the housing audits. The occupancy and lease-income records in the housing division of the university were reconciled for the Race and Florida Project faculty hous-

ing area by utilizing maps. The number of faculty homes available for rental was easily confirmed (15); likewise, the number renting at each of three different rates was clearly determined. For instance, the five homes leasing for the highest monthly rental rate were those on the diagrams with a greater square footage and more bedroom space.

The diagrams employed were the following: a 17½ by 26½ inch blueprint entitled, "The Staff Housing Plot Plan," an 8 by 11 inch black and white print of the same, and an 8½ by 11 inch blueprint of each of the three floor plans used—all obtainable either from the physical plant department or from the housing division.

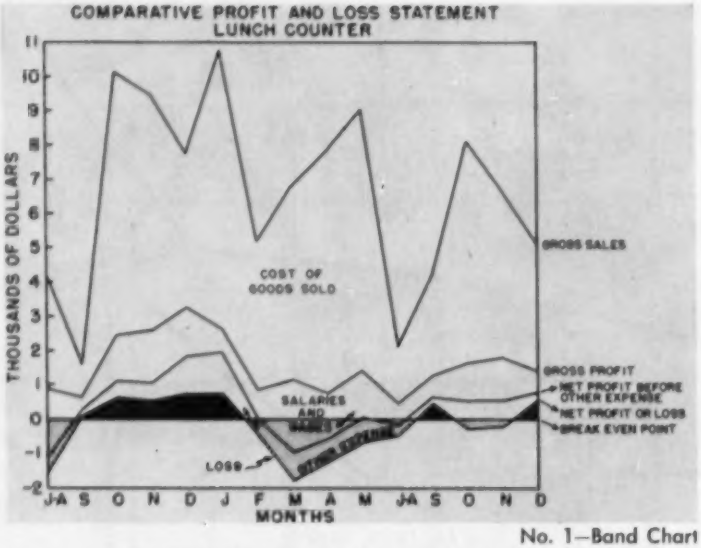
The diagrammatic auditing method for the lunch counter operation for the men's housing area took the form of statistical graphs. First, a comparative profit and loss statement covering eighteen months' operation of the lunch counter was prepared. Then a condensed statement of the foregoing schedule with percentages-to-sales for the key figures was compiled. These figures, in turn, were diagrammed on three closely related charts:

1. Band Chart
2. 100% Band Chart
3. 100% Stepping Band.

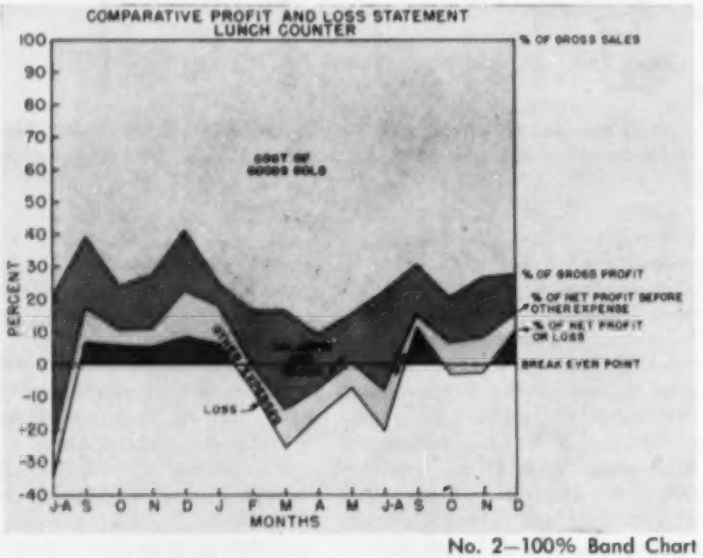
These graphs not only facilitated the interpretation of the comparative profit and loss statements, but also gave an entirely independent and speedy interpretation of the retail operation itself. Relationships of various cost bands to gross sales were quickly seen. According to K. G. Karsten, these charts are well suited for the presentation of changes in cost components.[2] However, he does not illustrate any band chart showing the changes in the distribution of cost and profit.

The Band Chart was constructed from absolute dollars-and-cents amounts. The surplus areas above the break-even point were colored green and the deficit areas below the break-even point were shown in red. An interesting development that arose in the making of the chart, and one, perhaps, that is entirely new, was the realization that not only the cost bands may be designated, but also the curves below the gross sales curve. For instance, the line separating the cost-of-goods-

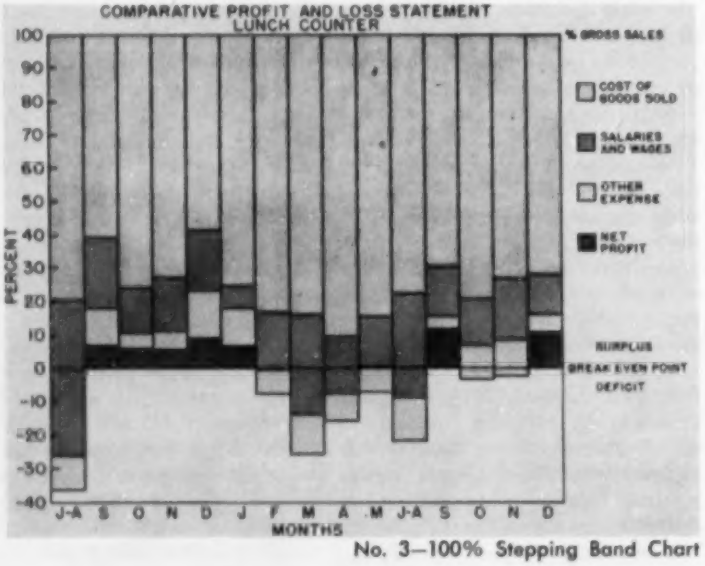
[2]Karsten, Karl G.: Charts and Graphs, p. 216.



No. 1—Band Chart


COMPARATIVE PROFIT AND LOSS STATEMENT
LUNCH COUNTER
PERCENT
% OF GROSS SALES
COST OF GOODS SOLD
% OF GROSS PROFIT
% OF NET PROFIT BEFORE OTHER EXPENSE
% OF NET PROFIT OR LOSS
BREAK EVEN POINT
SALARIES AND WAGES
OTHER EXPENSE
LOSS
J A S O N D J F M A M J A S O N D
MONTHS

No. 2—100% Band Chart



No. 3—100% Stepping Band Chart

The main house located in Robert Allerton Park.

sold band from the salaries-and-wages and other-expenses bands may be properly designated as gross profit. This chart, as applied to the lunch counter operation, clearly reveals an inconsistency between costs and sales and the need for corrective measures.

The 100% Band Chart was diagrammed from relative or percentage figures for the same operational period. The cost changes are sharper and more representable in this graph than in the previous one. The first deficit dip, for example, is steeper in its decline in the second graph than in the first one. Thus, the inconsistency between costs and sales of the operation under analysis is even more apparent in Chart 2.

The 100% Stepping Band Chart, according to Mr. Karsten, is "virtually a vertical bar or pipe organ compound, relative bar-chart."[3] It is really the correct way of representing cost components, but key-figure trends are not well distinguishable in the chart.

The foregoing examples drawn from the experiences of the University of Illinois' auditing division prove the frequent need of a diagrammatic technic in auditing procedure. The benefits of the method may be summarized as follows:

1. Diagramming brings to light relationships between figures and data not otherwise seen.

2. Diagramming provides an audit control element or cross-check, resulting in greater accuracy.

3. Diagramming gives a comprehensive and quick picture of a problem situation.

4. Diagramming is a strong supplementary aid in adequately thinking through an audit problem.

Dealing with figures alone without "tableclothing" or diagramming figures, data or recommendatory ideas often will lead to incomplete audit recommendations. Moreover, discussion of recommendations in an audit conference is difficult unless the auditor has a diagram with which to make an effective presentation. A systems and procedures man avoids the foregoing pitfalls through the use of organization and flow charts.

So firm is the auditing division's belief in the diagrammatic technic, we organized a complete file of maps and keep a supplementary file of other forms useful in carrying out "tableclothing." One example of our filed forms is a departmental inventory blank which is so designed that it fits the physical layout of inventory location. It therefore saves time in the taking of a physical count and assures that no inventory is omitted in the count. The department in this case not being conditioned by typical accounting forms and being extremely well acquainted with its own inventory problems probably produced a better form than we, ourselves, could have designed.

[3]Karsten, *op. cit.*, p. 217.

You might check your account percentages to see if they are out of line with the averages of 50 schools, as obtained by the questionnaire method

Physical Plant Budgets

L. L. BROWNE
Supervising Engineer, University of Arkansas, Fayetteville

IT IS A GOOD PLAN PERIODICALLY TO lean back and look over the physical plant department from an administrative point of view—organization, methods, costs. Since the first place to look is the budget, we sent out a questionnaire to get a comparison of the make-up of the physical plant budgets of institutions of various sizes.

The physical plant budget usually covers the academic buildings only (including administration and service buildings). Costs of operating and maintaining dormitories, housing, student unions, and competitive athletic plants should be kept separate and charged to them. The physical plant should not subsidize these buildings without knowing it. The questionnaire covers the budget on academic buildings only, although a few institutions that did not separate the square foot area of academic buildings from their total also were included. Three sizes of institutions were selected to average the results for each group: Those having 1½ million square feet and more of buildings constitute the large institution group, of which there were 20. There were 16 having 700,000 to 1½ million square feet, comprising the middle-sized institutions. The 14 having 100,000 to 700,000 square feet constitute the smaller institution group. This sizing checks very closely to the groups in the organization chart questionnaire made two years ago.

From a paper presented at the meeting of the National Association of Physical Plant Administrators, Laramie, Wyo., 1955.

DIVERGENCE IN ACCOUNTS

Conversations with business managers and directors of physical plant showed that accounts covering the costs of physical plant departments were pretty well standardized. Actually, there is considerable divergence in these accounts. If the physical plant accounts of all institutions were on the same basis, then the percentages of the budget spent on any one account should compare with the average and would be an indicated starting point for investigation or evaluation of this operation.

For example, suppose the average percentage of the budget for maintenance of buildings was 25 per cent, and the percentage for this division is 35 per cent. Perhaps the institution has a number of old buildings, perhaps a backlog of deferred maintenance, perhaps its methods could be improved and costs lowered. On the other hand, if the percentage for maintenance of buildings is only 10 per cent, it looks good, but is a backlog of maintenance being built up, and are the buildings being maintained properly? When the percentage is out of line with the average it can indicate a need for investigation. Probably there is a very good reason, but it is a good idea to know it.

The general accounts that cover the budget of the physical plant department are administration, general operation, janitor service, maintenance of buildings, maintenance of grounds, and utilities. Utilities is usually further divided into electricity, heating, and water and sewer, with possibly gas and air conditioning added. Because of the variation percentagewise of these accounts of the budget in the reporting institutions, it becomes necessary to give a short definition of what seems to cover each account.

1. *Administration* should cover the salaries and supplies of the director, assistant director, office manager and clerks, and engineers and draftsmen as far as the last two spend time on usual physical plant routine. Many institutions charge at least some of the foregoing salaries to a general administration account but they are properly a physical plant cost. Where special de-

signing or supervision is done for new buildings, remodeling, departmental projects, and so forth, these projects should stand these costs.

Institutions	% of Budget in Administration
1,500,000 sq. ft. and up	6.32
700,000-1,500,000 sq. ft.	7.21
100,000-700,000 sq. ft.	5.88

2. *General Operation* covers those items that would be difficult to charge to any particular building and yet are part of the physical plant operation, such as repairs to classroom and laboratory furniture, shop tools and equipment, hauling trash, and recharging fire extinguishers. Some institutions charge their P.B.X. costs into this account but it appears that these costs are part of the cost of telephone service and its share should be added to each phone.

Institutions	% of Budget in General Operation
1,500,000 sq. ft. and up	5.15
700,000-1,500,000 sq. ft.	9.14
100,000-700,000 sq. ft.	11.39

3. *Janitor Service* was defined by the N.A.P.P.A. many years ago as including janitors' wages and supplies, police, guards and watchmen. Some institutions place the cost of such special "setups" as commencement, seminars, high school meets, and others in Janitor Service. It appears that these are not regular charges to the janitor cost but should be charged to the particular activity affected. At least they should be separated from Janitor Service costs if not the Janitor Service account.

Institutions	% of Budget in Janitor Service
1,500,000 sq. ft. and up	24.90
700,000-1,500,000 sq. ft.	25.80
100,000-700,000 sq. ft.	27.80

4. *Maintenance of Buildings* covers the labor and craftsmen work on repairs to maintain the buildings in good appearance and usable condition. Large remodeling or improvements usually are done under special appropriations, but small alterations and betterments are included in this division of the budget by most institutions.

Institutions	% of Budget in Maintenance of Buildings
1,500,000 sq. ft. and up	25.25
700,000-1,500,000 sq. ft.	26.20
100,000-700,000 sq. ft.	22.30

5. *Maintenance of Grounds* includes the care of grass, roads, walks, trees, shrubs, flowers and nursery, as well as snow removal.

Institutions	% of Budget in Maintenance of Grounds
1,500,000 sq. ft. and up	8.38
700,000-1,500,000 sq. ft.	8.85
100,000-700,000 sq. ft.	9.33

The number of acres in the campus were requested, intending the actual acres cared for under the budget. This question apparently was not clear, as some replies were received which showed the acres cared for entirely out of line with the maintenance of grounds percentage of the budget.

6. *Utilities* includes the costs of supplying electricity, heat, water and sewer service (and possible gas for laboratories and air conditioning) to the buildings. Whether these services are manufactured on the campus or purchased from outside sources, the cost of maintaining the distribution systems and their losses should be included.

Several institutions combine all of their utilities in one account. The average percentage of the physical plant budget used for all utilities for the three sizes of schools is shown in the following.

Institutions	% of Budget in Utilities
1,500,000 sq. ft. and up	30.00
100,000-1,500,000 sq. ft.	22.80
700,000-700,000 sq. ft.	23.30

Figures were obtained and average percentages calculated for electricity, heat and water and the results are shown here.

ELECTRICITY

Institutions	% of Budget in Electricity
1,500,000 sq. ft. and up	7.31
700,000-1,500,000 sq. ft.	7.84
100,000-700,000 sq. ft.	8.43

HEAT

This utility was expected to show great variation, depending on the climate. Actually schools with five times the number of degree days showed only about two times the percentage for heat. For a check on climate, heat percentages were figured per thousand degree days at each institution and are shown here.

Institutions	% of Budget in Heat	% of Heat/1000 D.D.
1,500,000 sq. ft. and up	17.84	3.64
700,000-1,500,000 sq. ft.	12.33	2.17
100,000-700,000 sq. ft.	13.74	2.91

WATER

Institutions	% of Budget in Water
1,500,000 sq. ft. and up	2.69
700,000-1,500,000 sq. ft.	2.49
100,000-700,000 sq. ft.	2.81

For convenience of reference all results are combined in the table below.

Account	Average Percentage of Budget Square Feet 1,500,000 and up	700,000 to 1,500,000	100,000 to 700,000
Administration	6.32	7.21	5.88
General operation	5.15	9.14	11.39
Janitor service	24.90	25.80	27.80
Maintenance buildings	25.25	26.20	22.30
Maintenance grounds	8.38	8.85	9.33
Utilities	30.00	22.80	23.30
Electricity	7.31	7.84	8.43
Heat	17.84	12.33	13.74
Water	2.69	2.49	2.81
Heat percentage per 1000 D.D.	3.64	2.65	2.91
Main grounds percentage per 100 acres	17.67-0.47	25.20-1.00	25.00-1.40
Average number square feet	2,530,000	983,000	347,000
Number of institutions	20	16	14

The average percentages of the accounts within the physical plant budgets do not vary much between the three sizes of institutions. The larger schools spend proportionately less in each account with the exception of Utilities. The larger schools are predominantly northern schools and heat takes a high percentage of the utility expenditure, but they also are high on the basis of percentage of heat per thousand degree days. The unit costs of fuel, electricity and water are factors in these percentages. The smaller schools show lower percentages in Administration and Maintenance of Buildings. In Administration they probably have a proportionately smaller amount of engineering work. The Maintenance of Buildings percentage raises a question on condition of buildings or "backlog" of maintenance.

The average percentages of the physical plant accounts listed give the average for such groups of institutions. If your percentages are out of line with the average, they may provide a lead on where an evaluation of the operation of the physical plant department should start.

Oliver F. Anderhaulter and a student at St. Louis University, where five fully automatic calculators are available to students for either full-time or part-time use.

Calculator Laboratory

provides wings for the student mind

OLIVER F. ANDERHAULTER
Director, Bureau of Institutional Research, St. Louis University, St. Louis

THE STUDENTS WHO PASS THROUGH our colleges and universities represent some of the world's most brilliant minds, and a number of educators are coming to this conclusion: Too many of these students are burdened with petty, routine tasks that drain their energies and leave little time for the really important goal of creative thinking. Why waste these precious hours on monotonous chores that require small thought and no imagination?

The student, bogged down in tedious routine, has scant inclination to use his brain for greater things. Take mathematics, for instance. What could be more tiresome, more time consuming than figuring long problems by pencil and paper? Yet, math is vital to students in many fields—physicists, engineers, statisticians, agronomists, to name just a few. Educators are finding a better solution. They are providing mechanical aids for students whose courses require a great deal of math. The "calculator laboratory" is becoming a big thing in higher education.

What is a calculator laboratory? It's a kind of library of machines. Although they vary from campus to campus, the typical laboratory is located at a central point on campus. Students representing a wide variety of courses may come in and use the machines for their mathematical problems, much as they would a reference book. There may or may not be a slight fee for the use of the laboratory over a semester. In some cases, a machine might be loaned or rented to a student who wishes to take it back to his residence hall.

The machines are used a great deal by undergraduate students in statistics, for there are few studies that require more arithmetical computation than statistics.

In statistics, the most important part of a problem is *not* the arithmetical computation. It is analyzing and interpreting the results of these computations, drawing comparisons and arriving at conclusions. Yet, routine mathematics often takes 75 per cent or more of a student's time, even for the most basic procedures. The really vital work of analyzing and interpreting his findings gets a much smaller percentage of his time and probably not the sharpest share of his thinking.

Mechanical aids, however, reduce considerably the time and energy required for computation and give the student more opportunity for original thinking, thus the growing popularity of the calculator laboratory.

St. Louis University is planning a laboratory for the study of statistical methods for students in sociology, psychology, education and other fields. At present, five fully automatic calculators are available to students for full-time or part-time use. Additional machines are available for students majoring in mathematics, commerce and finance, and other courses of study.

Choosing the best type of machine for the laboratory is important. A survey of those now in use at colleges and universities probably would reveal a wide variety of calculators—all serving their purpose with varying degrees of success. At St. Louis University we made extensive time and motion studies on a number of calculators and were guided by comparison tests involving statistical operations.

Pictured are bio-statistics students in Harvard University's school of public health, where calculating machines are supplied. Because the hand machine is easier to learn than the automatic one, the nonelectric, hand operated models are preferred.

The machine selected kept the number of operations to a minimum because it offered entry keys for summing squares and cross-products—the usual starting computations for statistical analyses by our students. This resulted in a saving of time in addition to reducing operator errors. While this machine proved most suited to our needs, each college must study its own particular needs and choose the machine best geared to meet them.

The University of Wyoming is building up a fine laboratory for its students in statistics. Its laboratory reflects a trend to include a number of automatic machines along with hand operated machines. The use of one or the other would probably depend on the type of work involved. As problems become more advanced, the use of fully automatic machines becomes more mandatory.

What type of machine do the students themselves prefer? Some like the simple models; others prefer the more lightning operation of the automatic machines. Sometimes a student unconsciously will select the machine most closely geared to his thought process. The student, for instance, who is a faster thinker might choose the more automatic machine, while the more deliberate but no less capable student might select the slower manual machine. Very often a student will stick to the machine he first learns to use.

But ask students what they think of the idea of calculator laboratories and they're pretty definite. One rural sociology major grins: "If we had to do these problems with pencil and paper we never would get done." An industrial economics major estimates, "It would take about four hours to do this problem by hand. By machine it will take me about half an hour." And from a general science major: "The machines are more accurate, too."

A graduate student conducting important research at an agricultural station states, "Interpretation is the hardest and most important part. Without machines we'd be a long time getting answers to our problems. In many cases we probably wouldn't have the answers in time to do the farmers any good. For some of the experiments we're running now, we never *would* get the answers without machines."

At two of the nation's leading schools of public health—Harvard University and Johns Hopkins University—they're using calculating machines in a somewhat different way. The aim, however, is the same: to free the mind for creative thinking.

At Harvard University's school of public health, they began to supply machines for bio-statistics students after World War II. Like Johns Hopkins, they prefer the nonelectric, hand operated models, although they also have some electric machines. Reports Dr. Hugo Muench, professor of biostatistics, "We felt the hand operated machines were most convenient and useful at the price. Their portability is a big factor. The laboratory room is used for other purposes, and the machines must be locked in a cabinet when not in use. Then, too, any hand machine is easier to learn than an automatic, and easier to operate when moving from one activity to another."

The procedures taught in Harvard's bio-statistics classes will be vitally important one day, not only to the students but to the medical welfare of people in all parts of the world. "We are not turning out statisticians," declares Dr. Muench. "We are trying to teach people in public health how to get valid evidence out of data—how to question and test their answers. We teach them to be suspicious, because they will have to deal with these problems all the time, and their decisions may be life and death matters."

Wherever mathematics plays a major part in the training of a student—whether he hopes to heal an ailing world as a medical man or devise a new system of irrigation or uncork the explosive power of nuclear fission—the most important aspect of his career rarely will be the mechanics of two-plus-two. The important thing will be how he uses his mathematical findings. The world today needs ideas; it needs imagination and thoughtful reasoning. And it is our job as college teachers to develop these qualities.

No student can do his best creative thinking when bogged down with tedious, routine pencil and paper arithmetic that does little but numb his mind. The calculator laboratory is one means of saving him for better things.

Legislative Control of Tax Supported Universities

A fortunate few enjoy almost complete immunity from legislative and administrative control

T. E. BLACKWELL
Vice Chancellor and Treasurer
Washington University, St. Louis

IN THE EARLY DAYS OF OUR NATIONAL existence, the line of demarcation between public and private corporations was not clearly recognized. Privately endowed colleges were, at times, subjected to legislative control. However, the New Hampshire legislature was so sharply rebuffed by the United States Supreme Court in the famous Dartmouth College case[1] that some of the state courts were induced, erroneously, to accord the status of private corporations to institutions supported primarily by tax funds and to protect them from legislative encroachment. This confusion of the judicial mind continued, in some jurisdictions, until well into the present century.[2]

SUBJECT TO STATE CONTROL

Today, the majority of tax supported colleges and universities are considered to be public corporations created by the state legislatures and subject to their control. Some, however, have not achieved the dignity of separate corporate existence and are treated as mere departments of the state.[3]

On the other hand, a fortunate few enjoy almost complete immunity from legislative and administrative control as constitutionally independent corporations, created, not by legislative fiat, but by the will of the people, expressed in the organic law of the state constitutions.

UNIVERSITY OF MICHIGAN FIRST

The first American university to assert and to achieve this enviable status of autonomy was the University of Michigan.

In 1896, the supreme court of that commonwealth declared:[4]

"The board of regents and the legislature derive their power from the same supreme authority, namely, the constitution. . . . By no rule of construction can it be held that either can encroach upon or exercise the powers conferred upon the other."

In 1911, Michigan State College also was recognized by the courts[5] as a constitutional corporation and, by 1928, the University of Minnesota had achieved similar status.[6] The University of California has been granted some degree of freedom from legislative control[7] and the University of Idaho,[8] the Oklahoma Agricultural and Mechanical College,[9] the University of Colorado, and the University System of Georgia are now considered to have constitutional immunity from direct legislative control.

This year, the University of Utah made a determined but unsuccessful effort to join this select group of autonomous institutions.[10] By petition, its board of regents requested a declaratory judgment defining its rights and immunities.

Specifically, the University of Utah contended, and the trial court agreed, (1) that state fiscal officers have no control or check of the money expended by the university except the usual post-audit of all public disbursements; (2) that the university may authorize out-of-state travel of its employes without prior approval; (3) that the university is not subject to the laws enacted by the state legislature; (4) that any conditions attached by the legislature to the university appropriations, restricting the powers of its board of regents, are unconstitutional and void.

CONFIRM ORIGINAL POWERS

The regents based their demand for constitutional autonomy upon the fact that the Utah constitution,[11] adopted by the people in 1895, had specifically confirmed their original powers in the following words:

"The location and establishment, by existing laws, of the University of Utah and the Agricultural College are hereby confirmed, and all the rights, immunities, franchises and endowments heretofore granted or conferred are hereby perpetuated unto said uni-

[1]Trustees of Dartmouth College *v.* Woodward, 4L. Ed. 629 (1819).
[2]State ex rel. Robinson *v.* Carr, 12 N.E. 318 (1887). Orono *v.* Sigma Alpha Epsilon, 74 A. 19 (1909).
[3]Weary et al. *v.* State University of Iowa, 43 Ia. 335 (1876). State ex rel. Board of Regents of State Normal School *v.* Stover, 27 P. 850 (1891).
[4]Sterling *v.* Regents of the University of Michigan, 68 N.W. 253 (1896).
[5]Bauer *v.* State Board of Agriculture, 129 N.W. 713 (1911).
[6]State *v.* Chase, 220 N.W. 951 (1928).
[7]People *v.* Kewen, 10 P. 393 (1886). Wallace *v.* Regents of the University of California, 242 P. 892 (1925).
[8]State ex rel. Black *v.* State Board of Education, 196 P. 201 (1921).
[9]Trapp, State Auditor *v.* Cook Construction Co., 105 P. 667 (1909).
[10]University of Utah *v.* Board of Examiners, 295 P. 2d. 349, (1956).

versity and agricultural college, respectively."

The University of Utah was organized as the University of the State of Deseret in 1850. Students of American government will recall that the state of Deseret was a provisional or temporary government established in 1849 by the early Mormon settlers in the Salt Lake area. Deseret, according to the Book of Mormon, means "land of the honey-bee." A request by the provisional government for admission of the state of Deseret into the federal union was rejected by Congress, but its status as the Territory of Utah was recognized in 1850. In 1851 the legislative assembly of the territory, by joint resolution, recognized and confirmed the validity of all acts of the provisional government of the state of Deseret which did not conflict with the provisions of the organic act of Congress creating the territory. In 1892, the name of the University of Deseret was changed to that of the University of Utah and, as set forth previously, the constitution of 1895, adopted by the people upon admission of the state into the federal union, specifically confirmed the original rights of the university, granted to it upon its establishment in 1850.

REFUSES TO CONFIRM DECISION

However, the supreme court of Utah, in its current decision, refused to confirm the decision of the trial court. In its opinion, it pointed out significant differences between the wording of the Utah state constitution and the sections of the constitutions of Michigan and Minnesota, conferring autonomy upon their state universities. Said the court:

"If the framers of the Utah constitution had intended to create the University of Utah a constitutional corporation, completely autonomous and free from legislative control, it is difficult to understand why language such as was used in the constitutions of Michigan and Minnesota, and the other constitutions referred to, was not used."

The court also cited numerous acts of interference on the part of the legislature in the internal affairs of the university, accepted in the past without protest by its board of regents, as evidence of a lack of intent by the people of Utah to free its state university of legislative control.

[11]Utah State Constitution, Art. X Sec. 4.

Architect and Client Are Long and Closely Associated

So it behooves college officials to know what rightfully to expect of the relationship

CHESTER A. BERRY
Director of Student Activities
University of Rhode Island, Kingston

AFTER STATING THE OBVIOUS FACT that the relationship between the architect and the owner should be a good one, it would be wise to stress that the relationship should be a long one. The length of time thus involved should date back almost to the inception of the idea of a new building. In this way the architect is able to discover the needs and desires of his client while offering his professional advice and assistance early in the planning stage. Naturally, the architect should not be subjected to the inexhaustible number of committee meetings and conferences that bless and plague our campus planning procedures, but he should sit in at varying stages and be available for consultation by a representative of the planning committee. The relationship between the architect and the owner, then, should start early enough to permit each to understand the other's problems.

A.I.A. STANDARD AGREEMENT

The standard agreement issued by the American Institute of Architects states that the architect's professional services to be rendered "consist of the necessary conferences, the preparation of preliminary studies, working drawings, specifications, large-scale and full-size detail drawings, for architectural, structural, plumbing, heating, electrical and other mechanical work; assistance in the drafting of forms of proposals and contracts; the issuance of certificates of payment; the keeping of accounts; the general administration of the business, and supervision of the work."

According to the same agreement the owner shall "furnish the architect with the following information: a complete and accurate survey of the building site, giving the grades and lines of streets, pavements and adjoining properties; the rights, easements, boundaries and contours of the building site, and full information as to sewer, water, gas and electrical service. The owner is to pay for borings or test pits and for chemical, mechanical or other tests when required."

The owner's representative must have the authority and budget to obtain the foregoing information from the appropriate campus or other sources and should have ready access to such campus specialists as the college engineers, landscape experts, decorators or purchasing agents whenever he feels need for their assistance during the project.

TWO REPRESENTATIVES BEST

When both the architect and the owner are corporate bodies rather than individuals, the problem of maintaining a relationship is somewhat more difficult than that encountered when each is an individual, and this problem

grows as contractors and subcontractors enter the picture. It is most helpful if representatives are appointed from both the architectural firm and the university, each with a definite amount of authority and each assigned to act until the project is completed.

The architect's representative should be an architect and it is he who, ideally, initiates the project, prepares the preliminary drawings and specifications, coordinates the drafting, specification writing and inspection, acts as liaison between the owner's representative and the contractor, approves payments, and recommends final acceptance of the building.

The owner's representative, ideally, is the person most interested professionally in the building and who has enough time to work efficiently with the architect, the clerk of the works, the contractor, and the building committee or other university authority to whom he is responsible. This representative might be a dean, department head, professor or administrator who will use the structure and who has assisted in the planning from its inception. He need not, by any means, possess a knowledge of building technics but should be familiar with the physical requirements demanded by the functions to be housed in the structure.

TRANSLATING IDEAS DIFFICULT

Communicating ideas often is difficult and the difficulty encountered when architects and owners meet requires considerable skill and patience if it is to be transcended. Usually the architect must translate his ideas to the business, and supervision of the the layman while struggling to interpret those being presented to him. Blueprints often seem to frighten normally astute persons to the point at which they are unable to gain the vaguest information from them. While the architect can visualize a third dimension by examining a drawing, it remains a single plane to most others. Amateur sketches may overlook such fundamental items as plumbing lines, fire laws, or structural requirements.

The establishment of a common understanding or medium of communication early in the deliberations is essential if the architects and owners are to work efficiently. The owner must tell the architect in writing what he wants and expects, specifically and generally, and the architect must show how he proposes, in detail, to meet these demands and desires.

Obviously, for the owner to delineate his requirements he must know what they are. This calls for considerable examination and planning, some of it before an architect is retained, more of it afterward, but all of it in the early stages. The owner and architect working together early can eliminate many impracticalities, but the architect still must know at the outset what is expected of the building. Its purpose or purposes, means of achieving them, the capacity in terms of staff, students, rooms and facilities, its exterior and interior appearance, the atmosphere desired, its relation with the rest of the campus and with the institution's development plan, and its place in the educational and administrative scheme of things are some of the things that the architect should know when he starts.

This type of information an architect can translate into rough drawings, sketches and models as he works with the committee and the corrections and suggestions resulting from this working together can better represent the thinking of all parties concerned. Changes and innovations that are inexpensive at this time may be prohibitive later on. It is most important for the institution to know and tell what it wants.

Visitation to other institutions to inspect excellent (and, perhaps, poor) facilities will assist committee members to determine how they feel their desires might best be met. Reports, with photographs if possible, can guide both the committee and the architect. If exemplary buildings are near by, the architect and the owner representatives might make a joint visit. Should the architect specialize in the type of building under consideration, his opinion may be of added value and his products may be inspected with real profit.

SUBMITS COST ESTIMATES

With preliminary drawings and lists of specifications prepared, the architect is able to submit preliminary cost estimates. He will not guarantee such estimates but they will serve as a basis for seeking funds or for altering the rough plans as dictated by a budget figure. At this juncture such major aspects of the building as its location, floor plan, type of structure, equipment, utilities and service, and size should be agreed upon since variations in them may prove costly later on.

Following the approval of the preliminary plans the architect proceeds to complete working drawings, specifications and detailed drawings for the project. During this stage the owner's representative and the architect should maintain a close liaison since, regardless of the excellence of the communication which has existed between the two, questions will arise requiring consultation. The owner's representative should satisfy himself that the desires of the committee actually are being fulfilled by the draftsmen who are placing the plans on paper.

At this time the owner's representative should be able to call on the institution's experts for advice in such technical matters as plumbing, electricity, heating or hardware, should this seem desirable. Such details as door and window frames, light fixtures, hardware, trim, clocks, sinks and entrances require careful attention. They do much to affect the appearance and functioning of the building and should be subject to approval, either by sample, by photograph, or by drawing.

Agreement at this level will save misunderstandings later on and such agreements, confirmed in writing, will eliminate disappointments.

ELIMINATES MISUNDERSTANDINGS

If the owner obtains descriptions or photographs of equipment that will appear in the specifications only as catalog numbers, he and the architect will eliminate much of the misunderstanding that so often surrounds a construction project. Naturally, the owner's representative must not encroach upon the architect's province and should avail himself to the utmost of his expert advice and services. Nevertheless, it is his building for which he is paying and he has the right and duty to know what is proposed to be included in it.

Completion of the working drawings and specifications call for approval by the owner prior to the advertising for bids and awarding of the contract. The committee may wish to examine all drawings and specifications but the chances are that few committee members will possess the time and ability for this and the owner's representative, perhaps with some expert university assistance, will probably do so. If he has maintained

contact with the architects during the drafting and specification writing stage, he should be able to approve the project quite easily.

The architect is prepared to assist the owner in preparing bids, in selecting those invited to join in the bidding, if advertised open bidding is not the procedure adopted, and in awarding bids. His assistance is of great value in recommending contractors and subcontractors since he is in a unique position to ascertain the ability, integrity and resource of persons who are engaged in the building field.

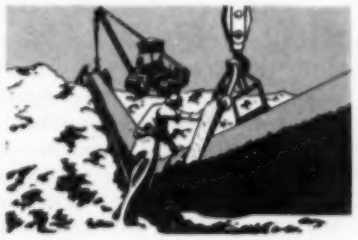
It should be remembered that the architect is as concerned as the owner in obtaining competent contractors with whom to work, since his time, services and reputation are involved. However, since he usually is paid a percentage of the total building cost, he is not likely to be as price conscious as is the owner. Mutual recognition of this situation should enable the architects and the owner to agree on a contractor or contractors. At this time the architect's assistance in arranging for contracts, performance and other bonds, insurance and a completion schedule is an important part of his services.

OWNER HIRES CLERK OF WORKS

Considerable misunderstanding exists concerning the amount of supervision of the work that is to be rendered by the architect. Unless specific arrangements involving additional payment are made, the architect provides only general supervision to guard "against defects and deficiencies in the work of contractors." Continuous inspection on the site is made by a clerk of the works, who is an employe of the owner but usually is selected by the architect. On projects of any size the salary of a competent clerk of the works is a small price to pay to assure the performance of the contract. The liaison that can be established by the clerk of the works between the architect, who may be engaged in several other projects, and the owner's representative, who will undoubtedly have responsibilities that frequently require his presence at places other than the building site, can do much to assure that the transformation of plans from paper to reality will proceed as originally visualized.

Errors in drafting or interpretation or of commission or omission are inevitable and the sooner discovered the more easily rectified. With a clerk of the works available to both architect and owner, transmission of information is simplified.

The relationship of the architect with such specialists as heating, electrical, structural and mechanical engineers, interior decorators, kitchen or laboratory experts should be clearly understood. Some architectural firms are prepared to offer all such services; others retain the services of other firms. The owner should be satisfied



that any engineering or other specialized assistance to be rendered will be as acceptable as that expected of the architect. If interior decorating, furnishings or equipment are not part of the architect's services, he should nevertheless be familiar with the proposals to ensure a unity throughout the project. Obviously, the reverse is true for those providing the decoration, furniture or equipment.

ARCHITECT SHOULD GIVE ORDERS

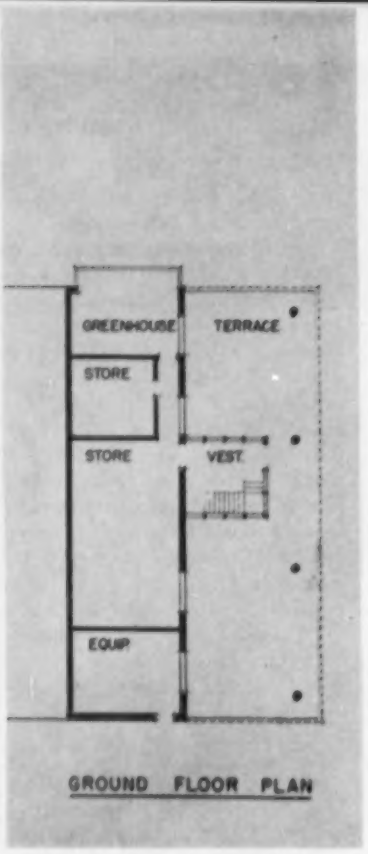
If the owner is to avail himself to the utmost of the architect's services, he will take care that all transactions with the contractors are carried out through the architect. In theory, even the slightest departure from drawings or specifications should be made only with the architect's consent and upon his order. While this may prove unworkable at times and the advice of the clerk of the works, contractor or university expert may indicate, for example, that immediate changes may be desirable or necessary to expedite construction during a period of unavailability of the architect, the authorization of such changes by the owner is a dubious method of procedure. Requests for such changes should be viewed with a jaundiced eye, although the owner may have to decide that the position of an electric service outlet or sink or counter should be changed. Since, presumably, much thought preceded the establishment of such locations, snap decisions under pressure and without the benefit of the architect's advice may counteract the time spent in earlier deliberations.

The complications of modern construction make field changes a foregone conclusion. While such changes may result in occasional credits, they are more likely to add to the building cost or effect no change in cost. The owner should insist that he be informed in writing of such changes, the changes in cost involved, and should receive print revisions should they be required. His consent to such changes should be written, if possible, and verbal consent confirmed in writing. The multiplicity of details and possibilities of misunderstandings are so numerous that complete records of all transactions should be maintained by the architect, contractor, owner and clerk of the works.

The architect will authorize payments as the work proceeds, such authorization indicating his approval of the project to date. The final payment will not be authorized until the structure is deemed satisfactory and accepted by the owner. Prior to acceptance the owner and the architect should work together to ascertain that the whole structure is acceptable, including all services and utilities. Any faults discovered should be reported in writing with copies to all concerned. The architect initiates the correction process and should be informed of all faults. The owner, whose money is paying for the building, should demand complete execution of the contract before accepting and paying for the structure.

RELATIONSHIP SHOULD BE CLOSE

The owner-architect relationship is a long and close one. The architect is familiar with problems that are likely to be new to the owner and the owner should make every effort to understand these problems. Lack of faith in the architect, poor relations or communications with him, failure to provide him with needed information are some of the things that may have an adverse effect on the whole project. At the same time, the owner must understand his own problems, transmit them to the architect, and see that they are solved. Once the structure is complete it is the owner and not the architect, contractors or clerk of the works who must live with it, and it is his final responsibility to see that the building is the right one.



Above: The ground floor of the general science building houses a greenhouse and three rooms for equipment and general storage. Below: The first floor has seven laboratories, an engineering drawing room, demonstration room, two lecture rooms, receiving and issuing room, a storage vault and offices.

Science Building for a Large Junior College

Description of building shown on cover page

DANE D. MORGAN
Architect, Dane D. Morgan and Associates
Burlington, Iowa, and Kansas City, Mo.

A NEW GENERAL SCIENCE BUILDING IS now in use on the campus of Graceland College at Lamoni, in southwestern Iowa. Graceland, a junior college, had a 1955-56 enrollment of 650 students. The science building will accommodate an enrollment of 850.

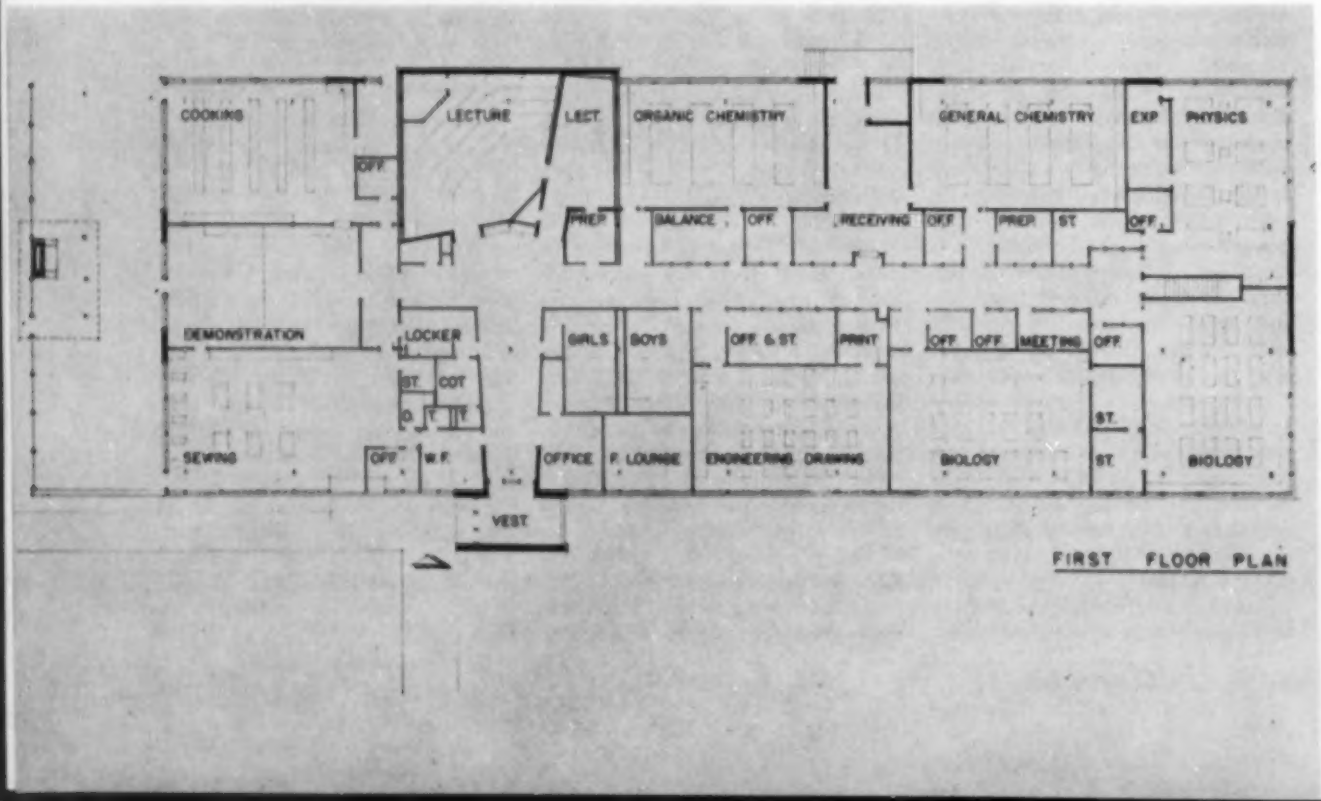
Completed in August 1955, this one-story structure (with partial basement) contains 26,500 square feet of floor area and is 245 feet long by 80 feet wide. Construction cost, including equipment, was $361,146.48.

The first floor contains an organic chemistry laboratory, a general chemistry laboratory, a physics and earth science laboratory, two biology laboratories, an engineering drawing room, a food preparation and nutrition laboratory, demonstration room, textile and clothing laboratory, tiered lecture room, and secondary lecture room. Offices, balance room, chemical storage vault, receiving and issuing room, faculty facilities, and general toilets complete the first floor.

The ground floor has a greenhouse plus three rooms for equipment and general storage.

The building is constructed of red brick and concrete and is fireproof. It is almost continuously lined with large glass window areas that provide a great deal of natural light in each classroom.

Provision has been made for two additional wings should future expansion be necessary. In addition, two paved, sheltered outside class areas on the ground level can be enclosed with a minimum of effort and expense.



Ease of maintenance is evident throughout the building. Laboratory walls have a 4 foot double glazed tile base and wainscot. Sills also are glazed tile. Cleanup is accomplished by wiping with a damp cloth. Vinyl plastic floors, requiring no waxing, cut down on janitorial duties, too. Wainscoting in the corridors extends to 7 feet.

Interior walls above wainscoting are aggregate block painted in pleasant pastel tints for eye ease and interest. Acoustical plaster is used throughout on ceilings.

All rooms are lighted by fluorescent tubing. Corridors are further lighted by a series of large plastic skydomes. Corridor partitions have continuous borrowed light windows above door height to provide natural light to interior offices and storage spaces.

A central steam plant provides heat. Individual rooms are heated by unit ventilators and convectors. In hot months the unit ventilators are used to circulate fresh air.

The floor plan is arranged so that home economics classrooms adjoin each other as do the science laboratories. Between these two areas are the lecture rooms, which have no windows and are air-conditioned. The air conditioning equipment is located in a penthouse above the two lecture rooms, and provides large quantities of conditioned air both winter and summer.

The large, tiered lecture room has complete facilities for movie and slide projection. A preparation room is located behind the demonstration area so experiments can be set up even while the lecture room is in use.

A general office, just inside the main entrance and adjacent to the faculty lounge, serves the entire building as a communications and reception center. One secretary will staff this office, handling the telephone switchboard, the intercommunication system to each room and office, and the general P.A. system for the whole building.

Each instructor has his own office next to his classroom or laboratory. Separate experiment preparation rooms also adjoin these rooms.

Laboratories have been arranged to provide 30 student stations. A large amount of equipment was designed especially for these laboratories by the college professors in cooperation with the company manufacturing it.

One problem that has arisen since the building has been in use is that the darkening venetian blinds in the biology laboratory did not cut out the exterior light to the degree necessary for micro-photography. This problem is being solved by the installation of lined draperies on traverse tracks.

An isolated balance room has been provided outside the organic chemistry laboratory. Next to the rear entrance to the building is located a special vault for chemical storage. Should an explosion occur, a special "blowout" window in the vault would direct the main force of the blast outside, minimizing damage to the interior of the building.

A combination receiving, storage and issuing room is centrally located. Most supplies are stored here rather than in individual classrooms and are dispensed as required. A water still in this room provides distilled water for use by the various laboratories.

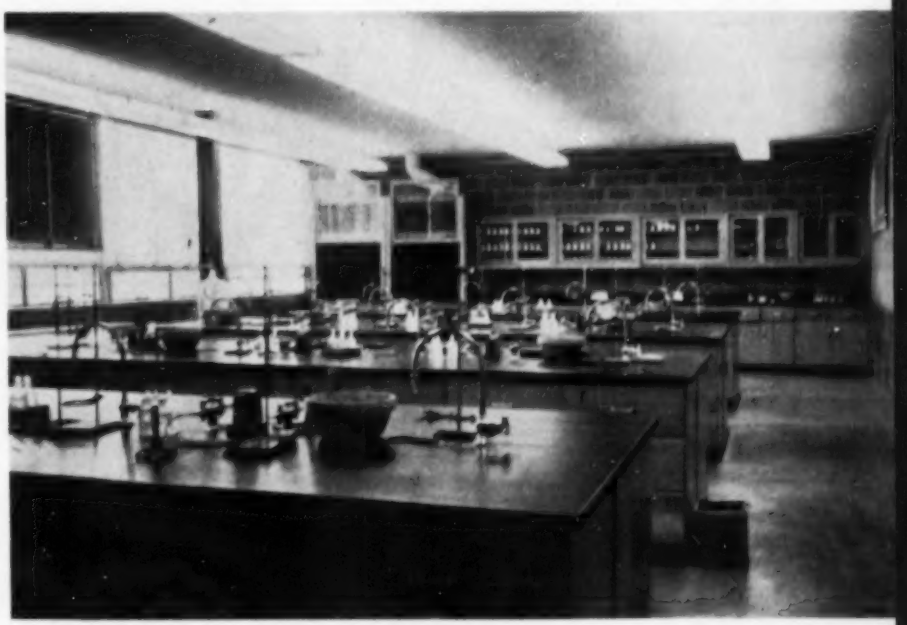
Directly off the receiving area is a truck height loading dock. The duties of receiving, storage and issuing are handled by a single student at a time, cutting down on the necessity for additional operating personnel.

The engineering drawing room accommodates 23 students, each with his own drawing table. Separate, locked storage space is available for 69 students, or three classes. The instructor has a raised platform so all students can see the illustrated lectures.

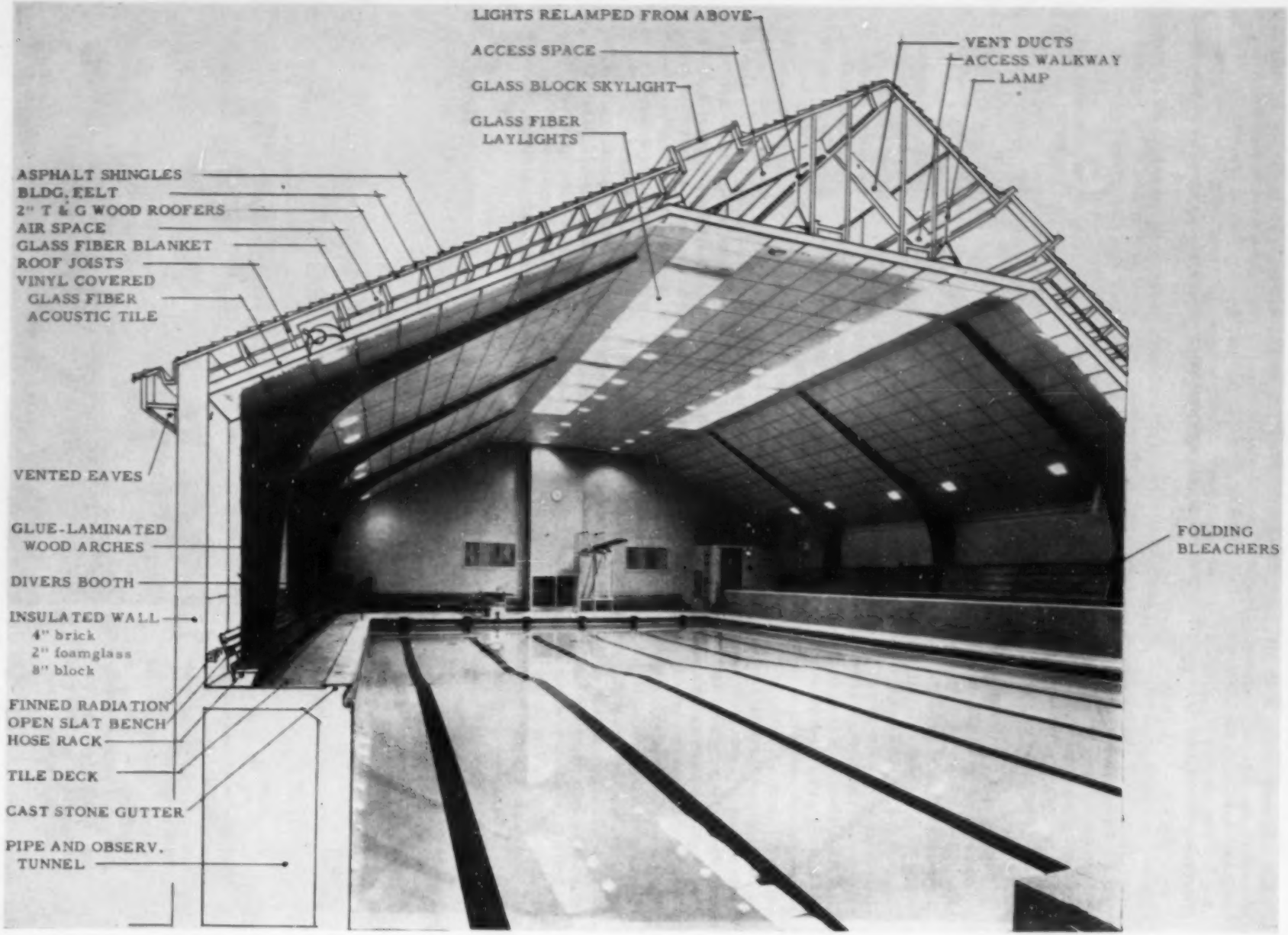
The home economics section, consisting of a food preparation and nutrition laboratory and a textiles and clothing laboratory (each accommodating 24 students) is located at the east end of the building. A large demonstration room in between can be used by students for actual room mock-ups, furniture and drapery arrangements. Various homemaking equipment also can be displayed here. A pass-through to the food preparation laboratory allows students to practice meal serving as it might be done in the modern home.

Of special interest is the outdoor demonstration area adjacent to the homemaking classrooms. It features a terrace (or patio) complete with large outdoor fireplace and pavilion shelter. Here students can practice outdoor cookery and lawn furniture arrangement. The entire area is enclosed by a wood screening fence.

Five separate contracts were let for the building: general, $205,285.28; plumbing and heating, $63,965; electrical, $28,772; equipment, $61,316.90; venetian blinds, $1,807.30.



The chemistry laboratory pictured, like the other laboratories, has walls of aggregate block above the glazed tile wainscot. Window sills also are glazed tile. The vinyl plastic floor requires no waxing, cutting down on janitorial duties. Laboratory is lighted by fluorescent tubing.

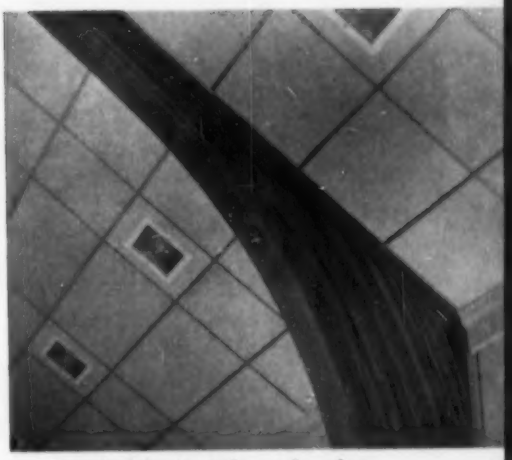

LIGHTS RELAMPED FROM ABOVE
ACCESS SPACE
GLASS BLOCK SKYLIGHT
GLASS FIBER LAYLIGHTS
VENT DUCTS
ACCESS WALKWAY
LAMP
ASPHALT SHINGLES
BLDG. FELT
2" T & G WOOD ROOFERS
AIR SPACE
GLASS FIBER BLANKET
ROOF JOISTS
VINYL COVERED GLASS FIBER ACOUSTIC TILE
VENTED EAVES
GLUE-LAMINATED WOOD ARCHES
DIVERS BOOTH
INSULATED WALL
4" brick
2" foamglass
8" block
FINNED RADIATION
OPEN SLAT BENCH
HOSE RACK
TILE DECK
CAST STONE GUTTER
PIPE AND OBSERV. TUNNEL
FOLDING BLEACHERS

Indoor Swimming Pool

added to prep school gymnasium

R. JACKSON SMITH

Partner, Eggers and Higgins, Architects, New York



Detail of laminated wood arches and a special acoustical tile.

THE $400,000 SWIMMING POOL ADDITION to the Hotchkiss School's Monohan Gymnasium has been in operation just over a year. It already has proved itself a valuable addition to the preparatory school's campus, and has also proved the success of several theories held by the architects about pool structures.

The high moisture condition in pool areas long has baffled designers in their search for a ceiling surface material that would be easy to maintain and also control the extreme noise usually found in such spaces. The high decibel rating of students engaged in water sports, and the sound reverberations that interfere with instructors, announcers and spectators long have caused acute concern to pool designers.

At Hotchkiss it was decided to try a 24 by 24 inch acoustical tile over the entire ceiling area. Not the usual porous residential type tile, this product is composed of glass drawn into fine fibers and bonded into a sound-absorbent board that is then covered with a plastic film facing. Its use in the Monohan Gymnasium swimming pool wing has demonstrated successfully high resistance to moisture (the fibrous glass does not absorb moisture and the film facing gives added protection), good thermal insulating properties, and high acoustical efficiency.

The ceiling system used in the Hotchkiss pool consists of laminated wood arches on 20 foot centers, and wood rafters covered with 2 inch tongue-and-groove sheathing, roofing felts and 300 pound asphalt shingles. A 2 inch blanket-type insulation is suspended below the joists. The ceiling tiles were hung from this structure by means of continuous aluminum T-bars.

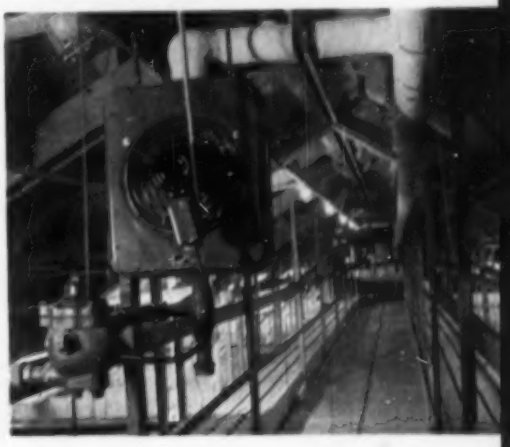
To minimize condensation on the structural roof members, air circulation was provided above the insulation. In actual operation it was discovered that condensation was occurring from two sources. Some moisture seeped through the space around the light frames and between the T-bar and tiles, condensed on the cold metal hangers, and ran down the face of the tiles. In addition, some condensation took place behind the tiles, where the joints of the 2 inch blanket insulation were not tight around the hangers.

This condition was remedied by (1) meticulously correcting the installation of the blanket around the hangers, thereby increasing the efficiency of the insulation, and (2) installing dual controls for the humidity. The seepage of moisture between T-bar and tiles could not be corrected in this installation. In future installations it is suggested that the joint be sealed off by splines or other means, preventing air seepage and resultant condensation. The tile itself has proved most satisfactory.

A second theory which the swimming pool addition bears out concerns the use of natural or artificial lighting over pools. The desirability of direct downlighting, with its elimination of glaring surface reflections, was a prime requirement established by Robert J. H. Kiphuth, swimming authority and Hotchkiss trustee. For economy reasons, however, Hotchkiss officials were reluctant to forego the uses of natural light during daylight hours.

A successful combination of the two systems is possible, as demonstrated at the new pool. Here two strips of top-access downlights are provided in the level space created by hanging a flat ceiling area 6 feet wide below the meeting point of the laminated wood arches. Additional bottom-access, lensed lamps were provided over spectator areas.

Two divided strips of specially designed glass block skylights extend over the pool and furnish additional direct downlighting. Each strip is composed of five 4½ by 12 foot units; the glass blocks used are designed with two air spaces in each to reduce heat loss and diffuse the direct rays of the sun. The result of this combination of natural and artificial illumination is to provide a glare-free nonreflecting pool during daylight and nighttime hours.



View above the ceiling showing the catwalk for relamping.

Multistory Residence Hall

houses medical students in congested area in New York City

EDWARD K. TAYLOR
Business Manager, Cornell University Medical College, New York

MANY ARTICLES HAVE APPEARED IN recent publications describing the problems confronting the planners of residence halls. Usually these dormitories are on campuses where a reasonably large ground area is available.

Unfortunately, conditions are materially changed when an attempt is made to design a structure in an area where space is at a premium and where city codes limit the design not only to percentage of ground coverage but to type of structure and materials. To meet occupancy requirements, a multistory structure is necessary, and this involves elevators, extra fire stairs, additional mechanical equipment, and many other items adding to the costs.

The designers of F. W. Olin Hall for Cornell University Medical College in a congested area of New York City were further confronted with the problems of attempting to provide a residence hall for students who, in most cases, had already spent four or more years living in student dormitories and who by nature of their studies as medical students would be subject to broken hours—in many cases, night duty in associated hospitals.

Above: F. W. Olin Hall, residence for students of Cornell University Medical College, located in the New York Hospital-Cornell Medical Center. Left: Most of the building's first floor is devoted to lounges.

It was evident that single rooms should be provided. In developing plans it was found that a connecting bathroom between each pair of single rooms was possible. The desirability of such a plan was recognized and, in the opinion of the committee, the additional cost justified.

In attempting to meet the needs of the student body, which at that time

In an attached wing to F. W. Olin Hall, at basement level, medical students enjoy a game of basketball. The gymnasium measures 73 by 43 feet, with a 20 foot ceiling.

was living in converted barracks, the committee appointed a student committee which, in consultation with the student body, submitted many suggestions for facilities that students would like to see included in the plans of the new building. All suggestions were received and studied by the building committee; some of the suggestions were adopted, and in every case a reason was given why some of the ideas could not be included. Although not an active part of the planning committee, the students were kept informed of the progress of the plans and their advice was sought on many occasions.

After preliminary plans had been formulated, layout drawings were prepared, together with an outline of specifications and estimates of cost. Estimates for the structure were based on $1.75 per cubic foot for a total estimated cost of approximately $2½ million. Final cost figures, including architects' fees, furnishings and all other costs, were within these figures. Funds were made available through the generosity of a foundation, an architect was appointed, and construction began in the spring of 1953. The building was ready for occupancy in September 1954.

All rooms are completely furnished, including blankets and linen. Full hotel service is provided, including maid service. Bedrooms above the third floor are for the exclusive use of men students. The third floor is for graduate students and transient guests, and the second floor is for women students, with one section for married students who may occupy two single bedrooms furnished as living room-bedroom. No cooking facilities are provided. The first floor is devoted to lounges, information desk, and entrance hall.

Other facilities include coin operated washing machines for men and women, a music practice room, locker space for visitors, trunk storage, a small pantry, and snack bar. No dining facilities are provided; meal service is available in the college-hospital buildings.

Rentals are based on student rates of $285 an academic year, or $35 per month. For all others the rates are $50 a month, or $2.50 per day. It is anticipated the building will be self-supporting except for depreciation of the structure.

Bedrooms are furnished with a desk, dresser, lounge chair, desk chair, end table, stool, bed with foam rubber mattress on plywood—all in natural hickory. The layouts and furniture have proved to be entirely satisfactory. Top grade furnishings were selected with the expectation that better furniture would be handled with more care by the students. So far this has proved to be the case, and the results have been gratifying.

The decision to accept increased costs in certain areas in order to keep maintenance costs as low as possible appears to have been justified.

CONSTRUCTION DETAILS OF F. W. OLIN HALL

STRUCTURE: L-shaped building, 46 feet wide by 100 feet on York Avenue, 143 feet on side street; 10 stories; reinforced concrete; 278 bedrooms. Plain limestone to second floor sills; light colored brick above; slate sills. Sash, double hung aluminum.

FLOORS: Basement, concrete; first floor, terrazzo. Wood floor in lounge rooms. Typical floors, asphalt tile, rubber base; toilets, ceramic tile.

WALLS: Typical exterior walls, furred, plastered and painted. Typical interior walls, cinder and gypsum block, plastered and painted. Stairs and basement corridors, glazed tile block.

CEILINGS: Basement, unfinished. First floor: bathrooms, suspended, plastered, painted; bedrooms, painted concrete; corridors, fiber acoustic tile on concrete.

STAIRS: Metal pan with concrete treads and platforms.

ROOF: Quarry tile.

ELEVATORS: Two push-button type.

ELECTRICAL: One ceiling light at entrance between closet and bathroom; base plug each wall. Buzzer and call system in each room.

HEATING AND VENTILATION: Exposed C.I. radiators; ventilation in bathrooms only.

TUNNEL: 8 by 8 foot tunnel under city street to medical college buildings, pedestrian, steam lines, etc. No heating plant in main building.

GYMNASIUM: Recreation hall, 73 by 43 by 20 feet, in an attached wing at basement level.

University House, community center for academic staff and research workers.

Living Quarters for Graduate Students

GEORGE HERRICK
Australian News & Information Bureau, New York

RECENTLY COMPLETED BUILDINGS OF the Australian National University in Canberra are best described as a modern architectural version of a medieval university. Not only are the buildings new, but the university itself is new, having been established in 1946. Its purpose is to provide a center of research for Australia to supplement the work of the universities in each of the states of the Australian commonwealth.

There are four foundation schools within its walls: social sciences, physical sciences, Pacific studies, and the John Curtin School of Medical Research. Fundamentally research institutions, these schools provide training for some 70 graduate students from other universities. There are no undergraduates.

University House, designed by Brian Lewis, professor of architecture at the University of Melbourne, was opened by the Duke of Edinburgh in 1954. In appearance and arrangement it is definitely removed from the usual college residence hall. An attempt, evidently successful, was made to perpetuate the graceful traditions of the older universities of Europe in the newer Australian environment. An objective was not only comfortable living quarters for postgraduate research and other workers but creation of a pleasant social center in the nation's capital. When the daughter of the prime minister was married last year, the refectory and other public rooms of University House were used for the reception. At other times it is a meeting place for visiting scholars from Australian and overseas universities.

The one and three story, balconied structures facing a central lawn or quadrangle, while modern in design and appearance, are suggestive of centuries old buildings of Europe, an im-

pression not carried on, for obvious reasons, to the separate research buildings grouped near the main structure.

By a quirk of fate, the builders found themselves using the nearest available materials, suggestive of the practices of the Greeks, Romans and later builders in Europe. Use of local materials resulted from shortages caused by the war. Normal building had ceased in 1939 and, when construction resumed in 1945, there was a desperate scramble for both materials and labor. The housing shortage was intensified by Australia's immigration policy that added a million to the population, which was only about 8 million in 1945. Canberra had its own housing shortage too, and government policy was to give precedence to public housing. So, construction projects such as University House suffered temporarily. However, the construction was supervised by the federal department of works.

The three-story apartment structure faces three sides of the quadrangle. The fourth side is single story and contains part of the public or community rooms. Living quarters consist of 96 one-room and two-room apartments (each with bath and telephone). All these face on balconies, each with an outside door opening on a common stairway.

Sixty apartments are of the bedroom-study and bath type; 60 more share the bath with another room and are equally apportioned to students and the domestic staff; 30 apartments have living rooms as well as one bedroom and bath; six on corners have two bedrooms and an electric kitchenette. All have ample sunlight and the balconies provide opportunity for study out of doors in Canberra's year-round pleasant climate.

The three apartment buildings facing the quadrangle are joined by a low curved wing containing most of the lounges and public rooms. Two three-story wings flare outward at this point.

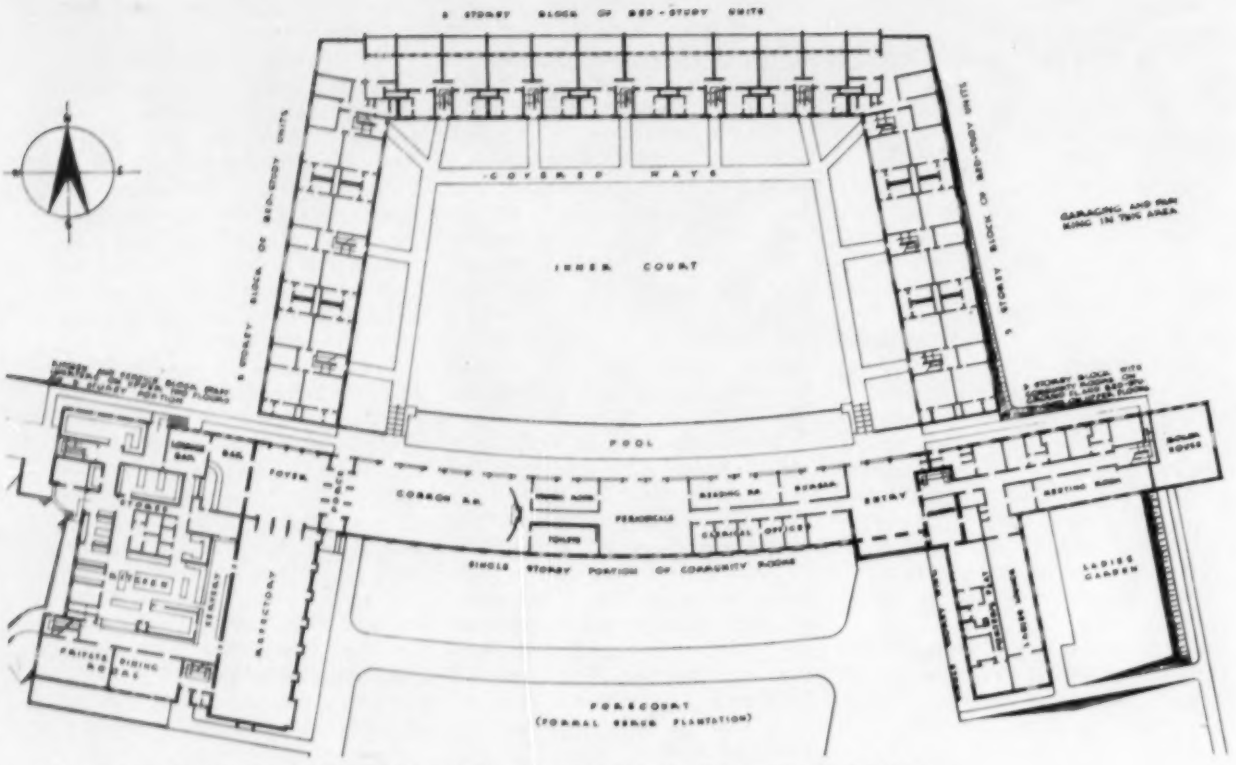
The low curved section that completes the fourth side of the quadrangle faces north and is protected from direct sunlight by wide eaves over a terrace that runs across the quadrangle. This terrace is paralleled by a pool that separates it and the common or community rooms from the extensive lawn.

The refectory, a focal point in the design, is in one of the wings. A high ceilinged room, it has a dais at one end for the high table. Over the entrance door, leading onto a foyer, is a narrow gallery to accommodate the press reporting some important meeting, or for musicians on special occasions, such as a wedding. Kitchens, food storage, and a private dining room are in the same wing. Kitchens have tiled floors and walls.

In the wing on the opposite corner from the refectory-kitchen is a suite of rooms reserved for women postgraduate workers and wives of staff members. This provides a meeting room and a lounge facing on the "Ladies Garden," possibly a concession to medieval days. The fall of the land provides plenty of basement space. This is partitioned into game rooms, storage and workshops, and such public utilities as telephone, electric, water supply and heating equipment.

Even the trained eye of the architect or builder would be unlikely to notice

Entrance hall, research school of physical sciences.



Floor plan of University House, residence hall at Australian National University in Canberra.

that University House was constructed with materials available rather than what might have been selected. Walls are of medium quality local brick, dashed over with thin cement rendering and colored in pastel tints. Walls are load bearing and support slab concrete floors, surfaced with hardwood on battens. Services are installed in the space between. Construction is fire resistant and designed to withstand blast from any possible bombing, which is an official policy today.

Main roofs are tiled with terra cotta, while the low common room section and small tower at the entrance are covered with sheet copper laid at a low pitch. Public rooms have steel framed windows, but wooden sash had to be used in the apartments. The lounge or common room wing has glass from floor to ceiling on the side facing the quadrangle. This is the first use in Australia of double glazing.

Although a number of materials wanted were in short supply at the time University House was built, fine local hardwoods were an exception. Australia, though lacking in soft woods for building construction, has a plentiful supply of beautiful hardwoods. So, a variety of these finished in natural colors of the woods have been used for paneling, providing a dominant motive in the color schemes.

Interior walls are painted in light colors with a few walls in full, stronger color for contrast. One example is the vermilion ceiling of the refectory, which sets off the pearl gray walls with their white structural members.

Use of medium quality bricks, the only kind available at the time, brought results that probably are better than might have been planned. Walls of the building facing the quadrangle are a light mushroom gray, contrasting with the pure white of the tower. The lounge wing and perimeter walls are yellow.

With solid brick construction, sound control was comparatively easy. The only sound absorbent areas are the ceilings in public rooms and the soffits, or undersides, of the stairway. Sound control in the main lounge has been obtained by using leather paneling on the wall opposite the double glass section looking out over the courtyard or quadrangle.

Air conditioning is limited to refectory and kitchen. However, ducts have been built in for a central system to provide full temperature control throughout most of the building. Little air conditioning is needed in Canberra, because of the equable year-round climate. Heating is by an oil-fired radiator system. In addition to radiators, the apartments have underfloor coils to furnish background heating. This permits a moderate degree of heat control by the occupants.

Decoration and furnishings create a homelike atmosphere. The two-room and larger suites give the impression of a small home rather than a dormitory. The furniture is solid and dignified. The telephone is the only contact with outside affairs once the front door is closed on a single study-bedroom or larger apartment.

The national character of University House is maintained by display of works by Australian artists, and it is planned to devote an annual appropriation to the purchase of paintings and other works of art. The main entrance is now flanked by a recumbent figure called "Relaxation." Sculptured in golden sandstone, it is the work of Gerald Lewers. The entrance hall floor is a colorful design in terrazzo.

A large mural is planned for the high wall behind the dais of the refectory. When this is finally executed, the building will be considered complete, or as complete as any growing and progressing institution can ever be.

Guidance Plan for Men's Residence Halls

ELMER A. GROSSHAUSER
Former Director of Men's Residence Halls, University of Colorado

An over-all view of the organization and administration of a counseling program in dormitories

Residence hall quadrangle, Boulder

THE RECOMMENDATIONS OF A MODEL plan for the organization and administration of guidance programs in men's residence halls will be presented here in the hope that they may be useful to the director of men's residence halls.

The most logical title for the man in charge of men's residence halls is director of men's residence halls. He should have a master's degree with training in business practice and procedure, personnel administration, and guidance and counseling. Since the latter two are of such importance in men's residence halls, it would be preferable for the director to major in educational guidance and counseling on the graduate level. Business education and personnel administration could well be the fields of undergrad-

uate preparation since there is always a volume of business transactions that take place in the proper administration of a residence hall, and there is always a large number of people who must be welded into a working, cooperative group to make the operation smooth and efficient.

Although one of the more popular names for the man in charge of a residence hall is counselor, the title "head resident" is more appropriate. He has a dual rôle to perform: (1) He is the man in active charge of the hall with power to take disciplinary action; (2) he is a counselor and friend of the men who live in his hall. The head resident should be a married, upperclass or graduate student who lives with his wife in an apartment in the men's residence hall. A student is preferred over a faculty member because he has fewer duties to perform for the school. This gives the head resident more time to devote to his residence hall responsibilities.

In order to be consistent, the men who assist the head resident should be given the title "assistant head residents." They, too, should be upperclassmen or graduate students living in a single room in the hall in which they work. The single room is preferred over a double room so that the counseling situation will be more tenable.

PREREQUISITES OF PERSONNEL

There are many prerequisites that men who are in charge of halls and their assistants should possess. These upperclassmen or graduate students should have had previous experience in handling men or boys, but not necessarily previous counseling experience. Interest in counseling, however, ranks as one of the highly important prerequisites.

Before selection of an applicant, several personal interviews seem highly important. It is not possible to get to know the young man's philosophy of life, to observe his appearance, and to make judgments concerning his personality without the use of the interview. Further, he should have a good knowledge of human relations, for his job is first to be an exemplary person, and then a counselor of men. It is helpful if he has been a previous resident, as he would then have knowledge of the procedures in the halls. A high scholastic average, a background in education and psychology, or previous counseling courses are prerequisites that may be considered when hiring men to assist in the guidance and counseling program.

Because these men are the key men in a successful program, when selecting them it seems unwise to rely entirely upon the judgment of one person. For this reason, the director should solicit the help of a committee composed of university personnel to help him in the selection of his assistants.

INSTRUCTION OF PERSONNEL

Among the most effective methods that should be used to instruct the staff are staff meetings, group conferences for inservice training, and individual conferences. Meetings preceding student occupancy to explain opening procedures are especially valuable. Staff meetings should be conducted regularly throughout the year.

Conferences for inservice training are organized to instruct the staff in procedures that can be used most effectively in day-to-day operation. Representatives from the offices of the deans, the all-campus counseling service, and other important personnel services should be asked to take an active part in these conferences.

Classes taught by school personnel can be organized for members of the staff, who also can attend guidance and counseling courses taught at the school. Workshop sessions, seminars on counseling, group planning sessions, orientation sessions, and meetings with other university personnel are all effective staff instruction procedures. Individual conferences with the director to talk over a problem are encouraged.

Basic to this program of inservice instruction is the development of a staff manual which should first of all contain the philosophy of the residence halls. This statement of philosophy should be worked out cooperatively and frequently reviewed so that it truly represents the thinking of those who have had a part in the program. It has little value if it has simply been handed down. Carefully worded, clear-cut purposes should be put down in simple, understandable language.

Counseling technics, references and an outline of duties and work schedules are necessary parts of a manual. The manual should contain information about the campus, the residence halls, the referral offices, and the rules and regulations in the halls. It should be used as a tool to develop in the staff wholesome attitudes and ethics on the job.

ORGANIZATION OF RESIDENCE HALLS

The number of men housed in men's residence halls on any single campus is relatively unimportant so far as the guidance and counseling programs are concerned, although many feel that the number should not run much over a thousand. The important phases are how many men live in each hall and the ratio of the number of men housed to the staff.

Hall size is important. Large halls are difficult to administer and require many assistants, but their basic disadvantages lie in the fact that men who live in the larger halls have little feeling of belonging to such a large unit. It is recommended that not more than 150 men be assigned to a hall and that there not be more than 50 men to each staff member. It is impossible to conduct an acceptable guidance program with a higher ratio.

CLASSES RESIDING IN HALLS

All classes should be allowed to live in the men's residence halls, but the director should reserve the right to deny continued residence to undesirables. It should be up to each person from the freshman to the graduate student to decide if he wishes to live in university operated facilities. Required residence breeds contempt and uncooperativeness. It is up to the residence halls to provide such an attractive place to live that there always will be a waiting list. Preference should be given to freshmen so that they will have an opportunity to experience group living under the guidance and leadership of well instructed university personnel. The freshmen, more than any other class, can benefit from this type of housing facility.

RESIDENCE HALLS OFFICE

The administration of men's residence halls should be centered in the office of the director. This office, responsible for all residence halls on the campus, including women's residence halls, housing for married couples, faculty and the like, should be in charge of the business affairs and the over-all administration of campus housing.

There should be one campus office responsible for all the guidance and

counseling activities carried on in the school. The person in charge of the guidance and counseling program in the men's residence halls should be responsible to this office. In the halls of fewer than 750 men, the director should be in charge of guidance and counseling. In residence halls of more than 750, the program should be in charge of a director of counseling who works under the central office but closely with the director of residence halls. When the residence halls reach the size of 750 or more men, five or more separate halls are involved, and 15 or more men are on the staff. The number of men, the number of halls, and the size of the staff warrant a separate director of counseling.

PURPOSES AND PROCEDURES

One of the most important reasons for carrying on a guidance program is for the orientation of men to the residence halls and to the school. This involves personal adjustment, which in turn requires the development of proper study habits and the proper use of leisure time. If a personal adjustment is properly made, academic achievement will be enhanced and cooperative living in the residence halls will be assured. The residents will also learn to choose proper activities and to move toward their vocational goals.

SPECIAL COUNSELING ROOMS

Special counseling rooms are not economically feasible and create an unnatural atmosphere which is not conducive to good counseling in the residence halls situation. It is recommended that the head resident have an apartment in the men's residence hall, that assistant head residents have single rooms, and that the director have a private office.

HOUSING INFORMATION

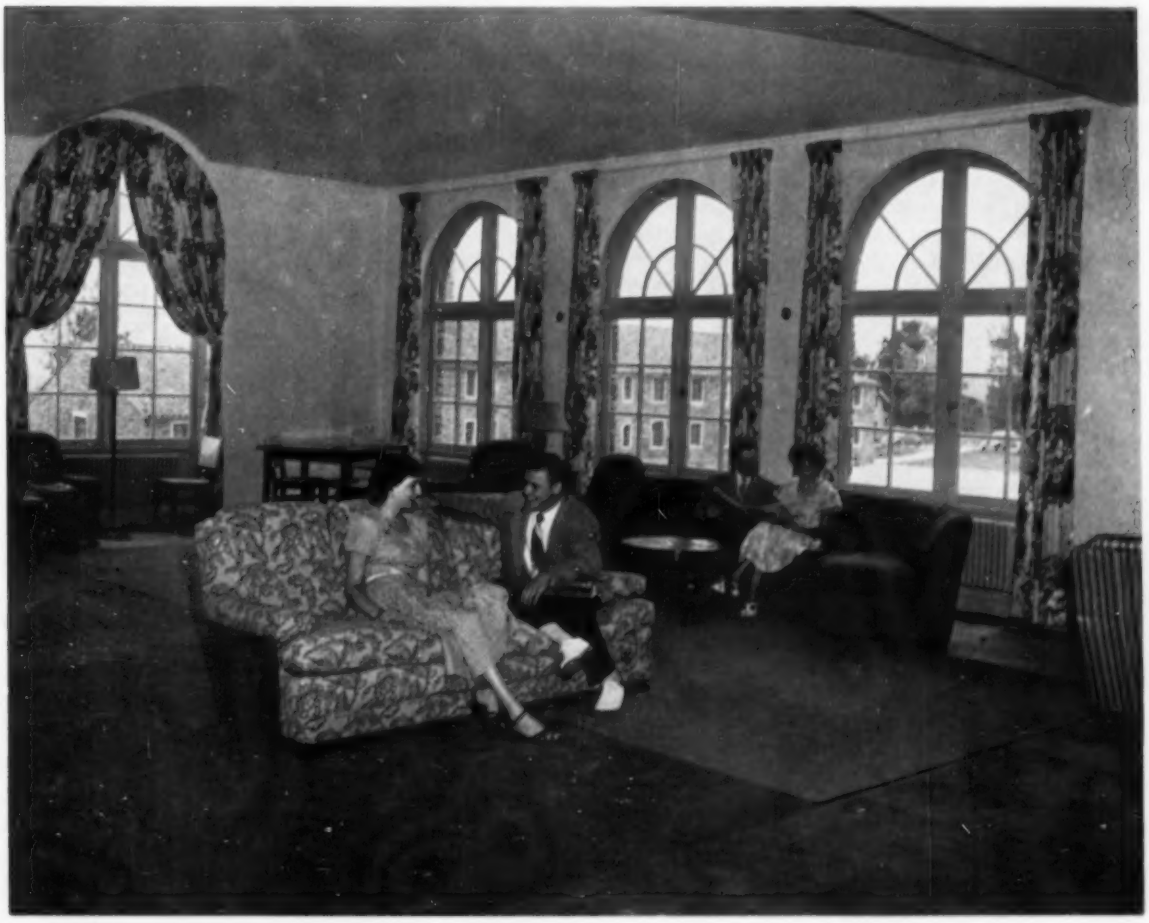
The residence halls should send out housing information to prospective residents. The admissions office may assist by referring prospective students to the residence halls for housing information. Experience has shown that it is unwise to mix admission procedure with residence halls routine.

When sending out notices of room assignments, other information may be sent, such as rules and regulations, a handbook or information sheet, a welcome letter, or other orientation material. Information sent along with a room assignment is likely to be read carefully if presented simply and interestingly. The first steps can be taken at this point toward developing a wholesome attitude toward group living.

GREETING NEW STUDENTS

The head resident and his assistant should welcome the new resident and make him feel at home. These staff members should be asked to check out linen or room keys so they will have an opportunity to meet the men assigned to their hall. Student committees should also be used to help perform the pleasant task of greeting new

Attractive lounges in residence halls provide a place for students to entertain their friends.



Baker Residence Halls, for men, make a year-round scenic picture with the mountains in the background.

arrivals. The more welcome a new resident feels in the residence halls the less likely he is to become homesick, and the more likely he is to get off to a good start in group living.

ORIENTATION MEETINGS

At least three group orientation meetings should be held for new residents at the beginning of the school year. These meetings offer a splendid opportunity not only to disseminate information to new residents but also to supply new residents with answers to their questions. These meetings further serve as a splendid opportunity for men to get acquainted with the director and those in charge of the halls.

Knowing a person is basic to understanding him. There is perhaps nothing less interesting than a purely informational type of orientation meeting. The orientation meetings should gradually be turned into interesting hall activities in which most of the men would want to participate. For example, an education film on etiquette may be shown or some entertainment may be planned.

Use of personnel cards is accepted as a valuable tool for guidance and counseling purposes. There are three considerations to keep in mind in order to get the best use and results from personnel cards: (1) the items listed on the card, (2) the proper filling out of the card, and (3) the use made of the card.

It is important that the items listed on the personnel card should solicit information that will be most useful to carry on an effective guidance and counseling program. The personnel card should carry items that orient the counselor to certain basic and preliminary information, save interview time, and help the counselor to get at the more basic aspects of a man's problems. At least the following items should appear on the personnel card: home address, family history, age, high school, faculty adviser, major field, interests and activities, church information, and fraternity information.

Personnel cards become more meaningful and valuable when filled out during an interview with a head resident, assistant head resident or an upperclass adviser. Personnel cards should be used frequently by head residents and their assistants to become familiar with the students' backgrounds and interests.

PARENT CONTACTS

Some organized method of contacting parents should be established. A form letter sent to parents, signed by the director of residence halls, proved to be a successful venture at the University of Colorado. The one-page letter to parents briefly stated the aims and procedures of the residence halls and explained what was expected of their sons. The parents should be made to feel that the staff is interested in them. If good rapport exists with the parents it will be easier to get parent cooperation when it is needed. Since most men students in the residence halls are under 21 years, parents still have certain legal obligations for their welfare.

UPPERCLASS ADVISERS

Some residence halls use students other than staff to help with the counseling in the halls. Among the things the upperclass advisers help

with most efficiently are orientating new men to the halls, helping them feel at home, and relieving homesickness. Upperclass advisers also can be used effectively in helping new students develop good study habits, in helping to organize residence hall activities, and in helping build good hall morale. Upperclass advisers never should be given more than five new men to counsel.

The key to a good upperclass advisers' program is to get these men enthusiastic about their job and to instruct them effectively. Among the most effective methods of accomplishing this are group workshop meetings and individual conferences. Written suggestions in the form of duplicated material and the staff manual should be used. There should be a culminating activity, such as a dinner, picnic or party at which the upperclass advisers are special guests. Other means of achieving these ends are to give recognition certificates and to place favorable notations on the upperclass advisers' permanent university record. The enthusiastic support of the management always helps to make the program roll along more smoothly.

REFERRALS TO CAMPUS AGENCIES

Most staffs of men's residence halls are unable to cope with all the problems that arise. Problems should be referred to other agencies when necessary or when the upperclass advisers, the staff or the director feels inadequate to handle them. The entire group of persons involved in the guidance program should be made aware of their limitations and be made to realize that many problems need specialized skill, advice, diagnosis and treatment.

The offices of the dean of men, the dean of students, and other important personnel offices should be more fully utilized. Some of the specialized services that should be provided on every campus are a student health center, a specialized counseling service, a testing service, and a psychiatric clinic. Other campus agencies that can be used are the study skills center, the speech and reading clinic, the faculty advisory system, the religious advisory service, the student loan office, the veterans affairs office, the offices of the academic deans, and the campus police.

ORGANIZATIONS AND ACTIVITIES

Development of student organizations and activities sponsored by the residence halls encourages students to become more responsible citizens and helps to encourage wiser use of leisure time. These activities also give the staff an opportunity to suggest proper conduct of the activity and of the men participating.

Student councils and hall organizations are found in many men's residence halls. These activities are highly recommended. Student committees, such as a hearing committee and a discipline committee, are especially valuable in developing student responsibility. A hearing committee is composed of a group of students who listen to violations of rules and make recommendations for action.

It is not difficult to set up machinery to bring student councils and hall organizations into existence. To get them to function properly and effectively within their scope, however, is a bit more difficult. When a need for such organizations is made known to the students the chances for the successful working of such organizations are enhanced. Also, when problems are presented to such organizations for solution, interest is generated. The what-are-we-going-to-do-about-this type of approach generates serious thought and brings forth attempts at the solution of problems.

The feeling on the part of the elected councils and hall organizations that they have accomplished something adds another impetus to these organizations. The extent of their authority must be made very clear, but within their province they must be made to feel that their decisions and wishes are respected. Again, enthusiastic support and recognition on the part of the management of these groups encourage participation in these activities.

Most residence halls sponsor such activities as intra-mural sports, social affairs, and dances. Others carry on such activities as exchange dinners, open houses, various tournaments, scholastic competition, and social affairs with women's residence halls. These activities are valuable adjuncts to the guidance program. The important prerequisites are that these activities serve existing interests and that they be well organized. The men themselves should have an active part in the organization of activities.

Too often it is found that residence halls are not built to accommodate adequately some of the recommended activities. In designing men's residence halls, space should be allowed for game rooms, reading rooms, libraries, lounges, dancing, clubrooms, darkrooms and the like. Bowling alleys, pool tables, and ping-pong tables should be provided. Land space adjacent to residence halls for playing fields, tennis courts, and other outdoor activities is important. Inter-residence halls' athletic activities provide not only physical energy outlets but they also develop friendly competition and rivalry among the halls.

Who's to Pay the Cost of Education?

This is a question that is bothering many people in these days of mounting costs. In the October issue, K. G. Patrick of the General Electric Company will make some pertinent suggestions on this subject.

Build a Food Cost Control System

that fits your specifications

BRUNO ADAMS
Assistant Director, Food Service, Northwestern University

IN DISCUSSING THE SUBJECT OF FOOD cost control, I will first outline the basic points and then enlarge upon each point as it should be applied to contract feeding.

Food cost control means any system, no matter how simple or complex, that gives you enough information to enable you to operate at a profit. The method involved takes into consideration the following basic points: (1) menu planning; (2) buying and receiving; (3) the meal—prepared, served and checked properly; (4) supervision; (5) food cost—daily, weekly or monthly; (6) labor—just enough at the right time.

APPLICATION OF BASIC POINTS

Menu planning. This can be done by a menu planning board consisting of a director, dietitian and cook, or dietitian or chef. I believe in having the dietitian do it in consultation with the chef. The successful menu planner is dependent on those who will carry out her plans. She must know the adequacy or inadequacy of her employes. Menus must be planned for ease of production and average food cost. She must consider economy in purchases and obtain full value from all purchases.

The dietitian can make excellent menus by using past menus as a guide in avoiding unpopular meals, the latest cookbooks, and current market prices on meats and fresh fruits and vegetables. The menus should be made out 10 days in advance so that the students can't tell the day of the week from the menus. For example, whenever you have spaghetti, it shouldn't always be on Tuesday. On the menu forms have room to write in meals for the use of leftovers.

In the larger units give the student some selection by letting him choose between soup, juice or salad as a first course and also between a baked fresh fruit or ice cream for dessert. The soup would be the same for lunch and dinner and you could have a variety of juices, but only one type of salad. These choices take the sting away from no choice on the entree, vegetable and potato. Also, this tends to reduce greatly the problems of leftovers. For example, if you have 30 orders of chef's salad left over from lunch, you can cut your salad portions for dinner by 30 and run the chef's salad with the dinner salad. You will find that 30 people will take the chef's salad for they like it better than the dinner salad, or they had soup or juice for lunch.

Buying and receiving. Each food unit should make out its own food orders according to prescribed specifications. You set up those specifications based on the students, faculty and staff you serve, local tastes, eating habits, intended use of product, and amount of money you have to spend for food. For example, some meat specifications would be as follows:

Beef, U.S. Choice Rounds, R & S off 55 to 65#
Beef, U.S. Good Rounds, R & S off 55 to 65#
Beef, U.S. Choice Boneless Chucks, Clod on 60 to 70#
Beef, U.S. Good Boneless Chucks, Clod on 60 to 70#
Bacon, No. 1 Hotel Pack 28-32 slices per #
Pork Loins, No. 1 12 to 14#
Lamb Legs, U.S. Choice 8 to 9#
Turkeys, Young Tom, Fancy Evis. 22 to 24#
Frankfurters (skinless), No. 1 10 to #
Ham, Canned Pear Shaped No. 1 12 to 14#

In setting up specifications always ask for price quotations on three grades (choice, good and commercial) of beef because then you always can tell the price spread in the grades. You will be amazed at the price spread at different times of the year. When prices are rising you can on many occasions buy the lower grade of beef and stay within your budget; when there is no spread between two grades, you can serve the better grade of beef. Once you have set up these specifications, stick to them until it can be proved to your satisfaction that there are better ones.

The buying can be done by a central purchasing office, which should abide by your specifications and send you the price quotations. In buying large quantities of food for storage you should buy for *quality* and price only. Never buy to anticipate shortages. If you could anticipate shortages, you would not be a food manager. Instead, you could make a better living on the stock market.

HAVE MEATS DELIVERED DAILY

Buy canned "bread and butter" items for the year and you will be protected on quality, size and price. Be sure to buy only the items used in large quantities or the price savings will be lost in your own delivery charges. Try to buy meats on a daily delivery basis so that you can keep trim waste and shrinkage to a minimum by not having the meat hanging too long in your refrigerators. Since fresh fruits and vegetables are so perishable, have them delivered three times a week. Grocery items can be ordered on a weekly basis.

In receiving, break down your checking into three groups: (1) meats, fish or poultry, (2) groceries, and (3) fresh produce. Have the chef check in the meats, fish or poultry since this is the largest part of the food dollar, and in most cases the chef does the butchering and, as a result, he will be much tougher in checking for quality and weight. In one case I know 40 out of 120 orders of fish were sent back because they were not cut properly. In another instance, cases of fryers were sent back because they averaged 2¼ to 2½ instead of 2 to 2¼ pounds. A storeroom man in

most cases would not have noticed this. The fresh produce should be checked in by the vegetable man for, here again, he is the man who works with the items and will check them more carefully.

The storeroom man can check in the groceries. Since they are not perishable items, they can be sent back later if mistakes are found. Proper checking is a constant problem because it becomes monotonous to an individual and he becomes friendly with old vendors. One of the best ways to keep storeroom employes alert is to tell them about mistakes another unit caught and how much better the fresh fruits and vegetables are at another unit because they do a better job of checking. Also, be sure to praise the person who discovers a mistake.

SHOULD KEE? DETAILED RECORDS

Large units should keep a receiving sheet showing the date, vendor and breakdown of the major classifications of food. All food units should keep detailed records of invoices on forms containing the following information:

Food item—Beef Rounds, R & S off
Date, quantity and price
Vendor
Size of containers or pack
Grade

From such records you can tell whether the price of any food item is going up or down or is remaining the same. With past cards you can tell if the price changes are seasonal or have been for other reasons.

The meal. Excellent menus and proper buying and receiving are defeated if all the preparations necessary for a good meal are not carried out. The vegetable and pantry man or woman must do his or her part in preparing the food according to instructions and without unnecessary waste. The meat must have been properly cut and prepared for roasting, and cooks must avoid overcooking and overseasoning. The carver at the steam table must cut the proper size portions and make them look attractive. When the meal is over, all of the leftovers must be properly handled and accounted for so that they can be worked into the menus.

All of these things have a definite bearing on food cost control. Therefore, it is important that all these factors be scrutinized carefully and kept under proper supervision.

Supervision. A good supervisor is the most valuable employe you could have. Supervisors have to see that policies are carried out and public relations are maintained.

The American Management Association has found that the most prevalent weaknesses of supervisors are: bluntness and abruptness, failure to recognize responsibilities or to enforce regulations, inability or reluctance to adjust to change, ability to see only their own point of view, talking too much, inability to arrive at decisions, and failure to hold to decisions after they are made. For these reasons it is necessary to have a training program for food supervisors.

The training program should cover the following: (1) what's expected of a supervisor; (2) how to analyze work and train employes; (3) how to schedule work and employe time; (4) how to control food quality; (5) how to control labor costs; (6) how to control food costs; (7) how to improve morale and handle grievances; (8) how to improve relations with customers.

A large food unit should have a production supervisor and a service supervisor. The production supervisor is responsible for seeing that recipes and controls are carried out in preparing the meal and for improving the old recipes and trying out new ones. The service supervisor is responsible for seeing that the portions of food are according to specifications

and that the employes, especially student employes, get no more or no less than they are entitled to. In a small unit, one person may be responsible for seeing that production and service are carried out properly.

Food cost. If all of the basic points mentioned so far are under control, I believe that a monthly food cost report is sufficient. The monthly food cost can be computed in the following way:

1. The food purchased report would include food purchased from vendors; food purchased from your own central stores; food purchased in an emergency from petty cash funds; food rebated from sale of old grease and bones or rebate on coffee purchases, etc. The total amount of these completes the food purchase report.

2. The income report would include contract meals (meals served to students and counselors); group meals on cash basis; meals transferred from one unit to another; cash (daily cash report that records meals sold on a cash basis to students, faculty and staff); charges (training table and other special groups that are on a charge basis); employes' meals (room service employes' meals that are charged by payroll deduction and student employes' meal charges); gross income (total of above); differential (value of meals missed), and net income (difference of gross income less the differential).

3. The recapitulation report would include opening inventory and closing inventory of the previous month; food purchased (total of food purchased report); food transferred (net value of food received); food available (net figures of above transactions); food available (net figures of above transactions); less closing inventory (subtract from above); net used (actual value of food used); gross income; net income; gross food cost per cent ("net used" divided by "gross income"); net food cost per cent ("net used" divided by "net income").

SOURCE OF COMPARISON

This recapitulation report gives an accurate report on your food operation. It also can be made to include labor costs. If you have more than one unit, a comparison between the units can be shown and sent to all the units and they can see how well they compare with one another. Besides keeping a monthly recapitulation report, you can keep a running monthly report for the fiscal year. This information gives a quick picture on how your costs compare with those of the same period last year or two years ago.

Labor. We can't discuss food cost control without bringing labor into the picture. An up-to-date job analysis for each employe must be kept. For example, a job analysis for the butcher would be as follows: (1) check and receive all meats, fish and poultry; (2) cut the meat into proper portions; (3) be responsible for any salvage possible, like fat and bones; (4) be responsible for the cleanliness of

the refrigerators, tables, equipment and blocks in his section; (5) carve the meat or serve the entree at the steam table during dinner—this job is necessary in most cases to fill out his work schedule.

JOB SPECIFICATIONS CHANGE

As new methods of packaging, preservation and distribution of food are discovered, job specifications will change or a job may even be eliminated. For example, most food establishments no longer use fresh vegetables and thus have eliminated their vegetable man. Peeled potatoes are now available. If the research in the field of preservation of foods by radiation fulfills its expectations, it will eliminate spoilage and allow foods to be cut and processed at slack times and thus spread some of the peak loads in the food preparation. Meats could be cut into portions a week in advance or more. There would be no trim waste and no waste from spoilage or leftovers. Baked goods could be prepared in advance and all types of food could be kept for much longer periods of time without the worry of spoilage.

I like to think of food cost and labor cost in combination. For example, if you want a food cost of 45 per cent and labor 30 per cent, then 75 per cent is your combination figure. If you then use 75 per cent, your food cost can drop to 43 per cent and your labor cost go up to 32 per cent. In feeding students on contract, you need this variation as long as you don't go over your combination figure.

In keeping labor costs in line, don't go along with the crowd but try to set up a system to fit your own particular problems. For example, an attendance form can be made up for each employe. An employe works six days a week and eight hours a day and then from his attendance form you figure out five weeks' vacation plus holidays plus an extra day for any holiday he may have worked. This could be figured on a fiscal year basis. If you can't give a man all his vacation time within the year, pay him for the time. However, this will seldom happen because generally when one unit stays open longer than others, you can transfer employes around to swing vacations.

This system has several advantages: You have fewer employes because you don't need extra swing people to cover days off; fewer employes eat less food; you provide annual employment by eliminating lay-off periods.

CONCLUSION

In the institution field we have become too involved in complex food cost control without a staff capable of working the system. The minute employes think you do not trust them, they will tend to be uncooperative and the food control system will not be accurate. We should give more praise and trust and responsibility to employes.

You have your budgets and past performance records as a start toward a control system. From there build a food control system that fits your specifications. If you have a small operation, keep it simple because it will only be one of many duties the manager will have. If you have a large operation, you can make it more complex for you can have a full-time person or persons doing the control for you.

Food service is unlike any other business because you can never reach perfection. However, the successful operator is the one who never gives up trying to reach that goal.

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Tulane University	New Orleans, Louisiana
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Indiana Central College	Indianapolis, Indiana
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Evansville College	Evansville, Indiana
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Trinity University	San Antonio, Texas
Jamestown College	Jamestown, North Dakota
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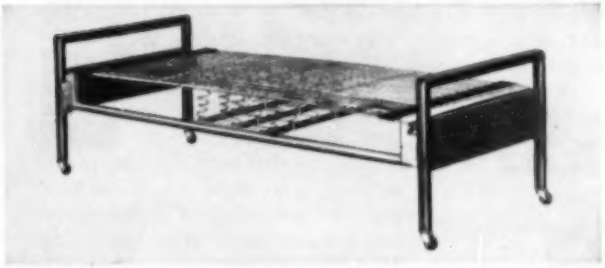

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NEWS

Millions for New T.I.A.A. Benefits . . . N.Y.U. Entitled to $2.5 Million Tax Refund . . . Small Colleges Discuss Problems . . . New Peak Reached in Gifts to Higher Education . . . Ohio State Plans Underground Parking

Ford Appropriates $5 Million to T.I.A.A. for New Teacher Benefits

NEW YORK. — An appropriation of $5 million by the Ford Foundation to Teachers Insurance and Annuity Association of America (T.I.A.A.) was announced recently by R. McAllister Lloyd, president of T.I.A.A.

The purpose of the appropriation is to enable T.I.A.A. to broaden its service to the college world by providing disability income and major medical expense plans for college staff members, Mr. Lloyd said. T.I.A.A. is a nonprofit life insurance company that now funds retirement and insurance plans for 700 institutions of higher education. The new group coverages will be made available for adoption by educational institutions in the United States and Canada before the end of the year.

The disability income plan is designed to provide long-term income for college staff members who become totally disabled. The major medical insurance absorbs for staff members and their families the impact of major "catastrophic" medical expenses up to a maximum that can be as high as $15,000 for any one illness or accident.

The Ford Foundation appropriation will cover developmental costs, initial surplus, and contingency funds for the new benefit plans. Premium payments by the colleges and their staff members will finance the long-range program of benefits.

Rules N.Y.U. Entitled to $2.5 Million Refund

WASHINGTON, D.C. — The United States Court of Claims recently ruled unanimously that New York University is entitled to a refund of $2,435,056 in taxes paid on profits of Knapp Brothers, Inc., a shoe manufacturing firm that had been purchased in 1947 by John Gerbes, an alumnus.

Mr. Gerbes and two of his law partners organized a new corporation "for charitable, scientific, literary and/or educational purposes, and that no part of its income or property should inure to the benefit of anyone other than New York University."

The court's opinion stated that "the purchase turned out to be immediately and spectacularly advantageous to the purchaser." Within a little more than a year, the new concern had repaid a bank loan of $918,000 and paid off its debt to Knapp Brothers with interest. The federal government assessed and collected income and excess profit taxes over the protest of the new firm acting for the university.

The court held that the university is exempt from such taxes.

Judge Bigelow Approved for Rutgers' Board

TRENTON, N.J. — The New Jersey senate has belatedly confirmed the appointment of former Superior Court Judge John O. Bigelow to the board of governors of Rutgers University. The senate had held up the confirmation of Judge Bigelow after it was learned that he was acting as counsel for Robert Lowenstein, a Newark school teacher discharged for pleading the Fifth Amendment 13 times before the House un-American activities subcommittee in May 1955. It had been bombarded with protests from various state bar associations and fraternal groups, who demanded confirmation of his appointment.

Senate President Wayne Dumont has stated that the opposition to Judge Bigelow was not based upon his representing a Fifth Amendment pleader, but on the fact he refused to state categorically that he would suspend any Rutgers professor so pleading.

1954-55 Gifts to Higher Education Reach All-Time High

NEW YORK. — Gifts to higher education in the United States mounted to an all-time peak in 1954-55, the findings of an annual study of gifts and bequests to 50 colleges and universities indicate. The results of the 1954-55 survey conducted by the John Price Jones Company of New York, consultants in institutional financing, reveal that total giving to the institutions included in the firm's 35 year continuing study reached $142,149,000, a gain of 7.4 per cent over the previous year's high of $132,356,000.

Earlier this year the Council for Financial Aid to Education and the American College Public Relations Association had reported the results of their joint survey which disclosed that 728 institutions of higher education had received $336 million during 1954-55. Although the 50 institutions represented in the John Price Jones study comprise only 6.9 per cent of these institutions, they accounted for 42.3 per cent of the amount reported in the earlier survey.

Gifts increased to $114,852,000, 13.3 per cent over the previous year's total. Bequests declined 11.9 per cent to $27,297,000. The bequest total for 1954-55, however, was only 1.6 per cent under the average of $27,727,000 for these institutions over the last five years.

Gifts by the living constituted 80.8 per cent of the total and bequests, 19.2 per cent. Contributions continue to be made primarily for current purposes and bequests for capital purposes. Almost two-thirds of the gifts went for the current needs of the institutions; nine-tenths of the bequests were for capital purposes.

The 35 year total of gifts and bequests amounts to $2,221,454,000. The

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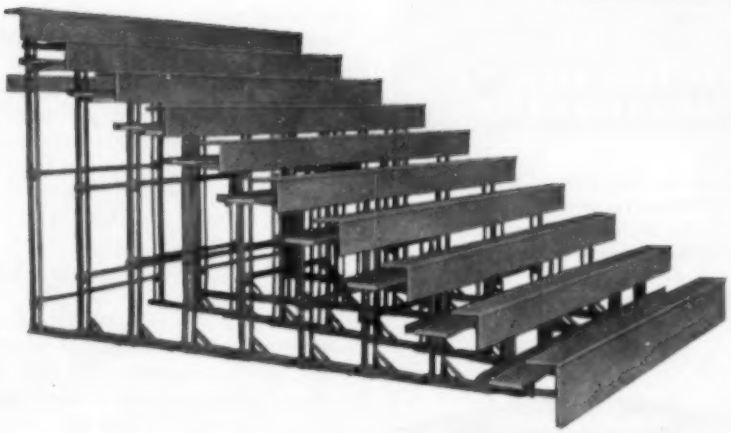

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five leaders in 1954-55 were Harvard, with $16,787,000; Cornell, $9,241,000; Yale, $8,564,000; New York University, $8,264,000, and Columbia, $7,379,000. Six other institutions that received benefactions in excess of $5 million were California, Chicago, M.I.T., Northwestern, Princeton and Stanford.

The study indicates that over the last five years total benefactions to the colleges and universities surveyed have steadily increased. The total has risen from $109,759,000 in 1950-51 to $142,149,000 in 1954-55, an increase of 29.5 per cent. The annual average total of $124,438,000 for the last five years slightly more than doubles the annual average of $52,210,000 for the decade preceding 1950.

To Seek Public's Aid for Higher Education

NEW YORK.—A nationwide campaign to increase public interest and support for higher education will be started early next year, according to a recent announcement by the Advertising Council. The mass media campaign will be sponsored by the Council for Financial Aid to Education, Inc.

The project is expected to focus attention on both private and tax supported higher education. Advertising agencies, communications industries, and national advertisers will contribute their services to the drive.

Hold Workshop to Discuss Problems of Small Colleges

SANFORD, MAINE.—Dr. Alfred T. Hill, former president of Pine Manor Junior College of Wellesley, Mass., has been appointed executive secretary of the Council for the Advancement of Small Colleges, according to an announcement by the executive board.

The council sponsored a week-long workshop that began August 5 on the Nasson College campus in Springvale, Maine. Dr. Hill's appointment became effective September 1. One hundred presidents and other executives of small colleges from 50 colleges representing 24 states attended.

President of the council is K. Duane Hurley, president of Salem College, Salem, W.Va. John Z. Martin, president of Upland College, Upland, Calif., is vice president. President of the host college, Dr. Roger C. Gay, is secretary-treasurer.

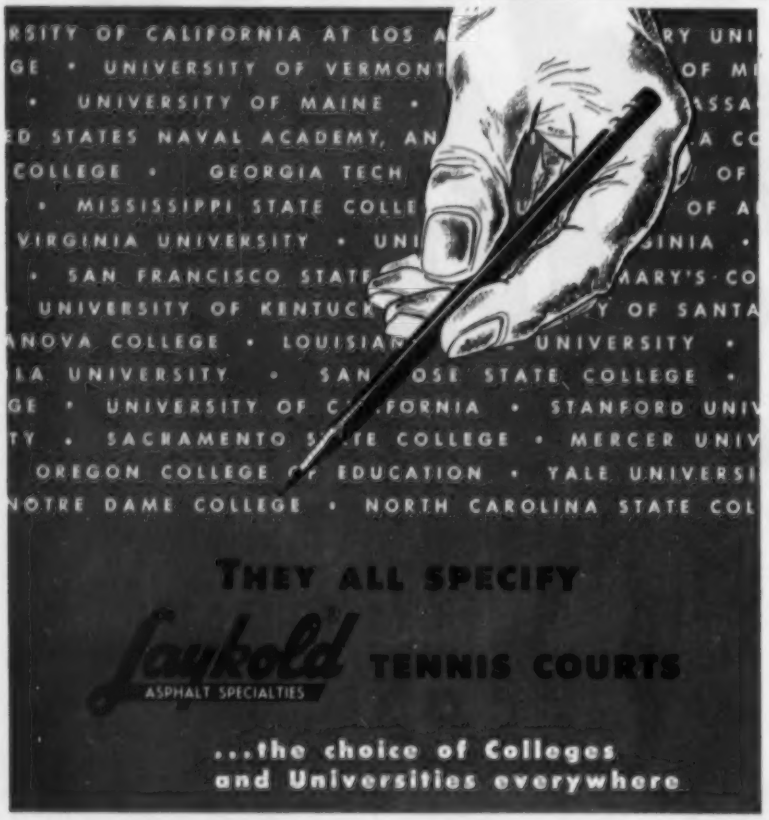
The workshop was the first major project of the council. U.S. Steel and Union Carbide and Carbon Co. gave financial aid for the workshop.

Dana M. Cotton, executive secretary of the New England Association of Colleges and Secondary Schools, pledged the cooperation of the nation's regional associations of colleges and secondary schools.

Dr. Wilson Compton, president of the Council for Financial Aid to Education, reporting on trends in corporate support, said the reason small colleges should be supported is that "what happens to American education will happen to America."

Anthony F. Wilker, Union Carbide educational fund trustee, told the group that the present interest of industry in giving financial aid to colleges is to perpetuate the idea of private higher education in the United States. "You aren't doing that if you withhold financial nourishment to small colleges, which represent the seed-bed of future higher education," he said.

Three major points were arrived at from a study made of 100 nonprofit organizations that was discussed at a



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panel discussion on small college management. They were:

1. Small colleges are efficiently run and are not wasteful of funds. The compulsion of limited resources plus administrative ingenuity and student self-help brings about efficiency operation.

2. The foregoing factors impose upon the small college president and his staff an operating burden that deprives them of the opportunity to develop needed gifts from outside.

3. Business consultants agree that small colleges need about a million dollars to finance development programs for fund raising among their own alumni and friends.

The panel discussion was led by Harlow Heneman, a partner of Cresap, McCormick and Paget, New York City; John M. Schlegel, treasurer of Lafayette College, Easton, Pa., and Irwin K. French, executive director, National Federation Consulting Service, Wellesley Hills, Mass.

Wade Arnold, former N.B.C. producer and currently a writer-producer and consultant in the television field, charged that "the philanthropists and corporate givers are following a pattern well established in American industry, 'to him that hath, it shall be given.' The result is that big colleges get bigger and little ones fall by the wayside—except some that become subcontractors to the big boys. There is a worthier place in America for the small college than becoming an auxiliary section of the lengthening assembly line of so-called higher learning," he declared.

That the crisis in American education is here now—not in 1960—was emphasized by David Church, executive director of the American Association of Fund Raising Council, Inc. "Evidence of that crisis," he said, "is being felt in hundreds of homes where Junior can't get in the college of his first, second or even third choice." He added there is a great misunderstanding that a good education can be had only in the big name schools.

"The education dollar," he also said, "goes farther in the small college than in the large ones." In the next decade $13 billion will be spent in new facilities for higher education. It takes $10,000 per student in facilities in the big universities, but the small college can train six or seven students for the same amount," Mr. Church declared.

Consider Educators for Foreign Aid Study

WASHINGTON, D.C. — The Senate foreign relations committee is reported to be considering plans to permit a team of leading educators to conduct a major part of its $300,000 long-range foreign aid study.

Committee representatives stated that much of the work probably would be contracted to a leading university, possibly the Massachusetts Institute of Technology or Columbia University.

According to present plans, the universities would collect views on what changes should be made in the foreign aid program. They would probably seek such views from former officials of the aid program, educators, businessmen, trade officials, and authorities on world affairs.

Aids Students to Become Politically Minded

NEW YORK. — The Ford Foundation has made available $975,000 over a five-year period to the Citizenship Clearing House of New York University. The money will enable the national organization to further its

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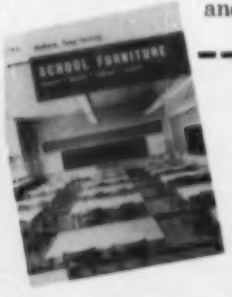

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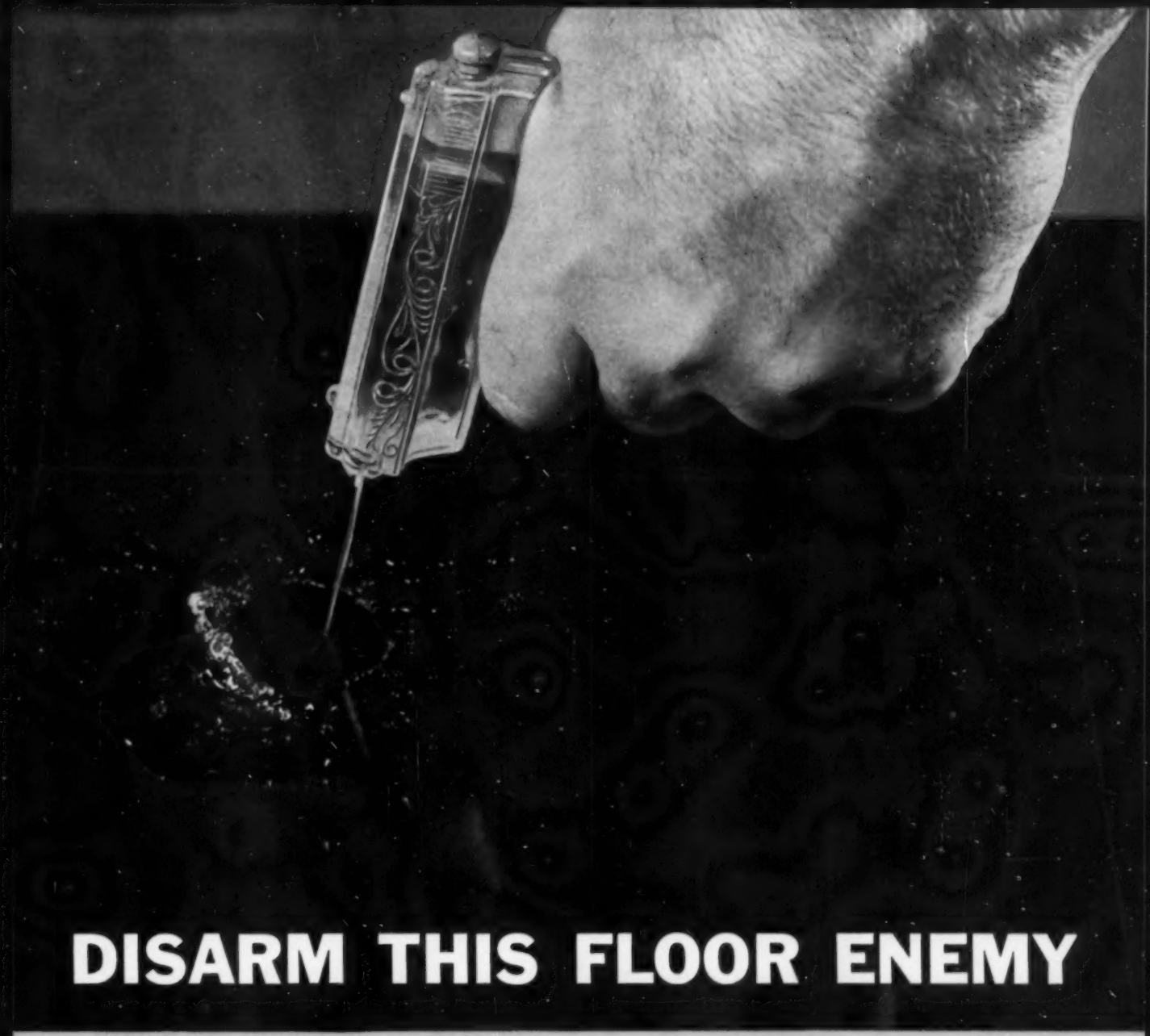

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Use Brown Label or other heavy-duty products of Johnson's Wax and most floor problems are solved automatically. Should you have a "toughie", the expert know-how of a Johnson J-Man is available through your distributor.

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PRODUCTS AND SERVICES FROM JOHNSON'S WAX TO SOLVE ANY FLOOR PROBLEM

"JOHNSON'S", "BROWN LABEL," AND "NO-BUFF" ARE THE REGISTERED TRADEMARKS OF S. C. JOHNSON & SON, INC.

Lock-type Letter Boxes Solve Mail Handling Problems

...for schools, colleges, institutions

★ Lower Mail Handling Cost
★ Eliminates Mail Theft
★ Assures complete privacy
★ Choice of combination lock or key type
★ Available with same key for room door and mail box
★ Approved by U.S. Post Office Dept.

Plain Architectural Unit available in three sizes, statuary bronze or dull chrome plate.

Write for Federal's new bulletin on Lock-type Letter Boxes and other Mail Room Equipment.

THE FEDERAL EQUIPMENT COMPANY
Carlisle, Penna.

program of encouraging talented college men and women to become active in public affairs and politics.

Much of the grant will go to 24 state and regional affiliates of the Citizenship Clearing House now operating throughout the country. These affiliates are located at leading educational institutions, each of which enlists the cooperation of other colleges and universities in the area. Currently, 400 colleges and universities are taking part in the Citizenship Clearing House activities.

Under the Ford grant, the affiliates will expand their efforts to increase the political awareness of college students by (1) initiating statewide and regional conferences involving political leaders; (2) providing for an exchange of information on political science teaching technics and materials among colleges and universities; (3) inviting political party officials and public officeholders to become active in the organization and help instill in the students a realistic understanding of political processes; (4) developing political unions on the campus for the discussion of current issues, and (5) initiating a program through which the interested student could serve an "internship" in the political party of his choice.

Approves Plans for Underground Parking

COLUMBUS, OHIO. — First underground parking facilities on the Ohio State University campus will be built for use in connection with its 3200 seat Mershon Auditorium, to be completed during the coming school year.

The university's board of trustees recently approved plans and specifications for the auditorium parking facilities.

The reinforced concrete parking facility will be located directly north of the auditorium. There will be one parking level below ground, with space for approximately 200 cars. The above-ground parking area will handle some 220 cars.

A control booth will be the only part of the structure above ground level. Below ground will be a small waiting room, attendants' booth, and toilet facilities, in addition to the parking space.

The $2,470,000 auditorium is being financed by income from a bequest to Ohio State of the late Col. Ralph D. Mershon.

IT'S AS EASY AS 1-2-3...

TO TEACH MORE STUDENTS MORE EFFECTIVELY WITH RCA!

1 Record and reproduce whatever you wish, in high fidelity, with RCA Victor's New Orthophonic Tape Recorder 7TR3. Compact, easy to carry, with push-button control that's simplicity itself.

2 Enjoy a compact portable's convenience along with rich high fidelity at a low price in RCA Victor's New Orthophonic Mark VII. Laboratory balanced, with Panoramic 3-Speaker System and 4-speed record changer.

3 Hear vividly clear, educational FM programs, and every AM program, too, on RCA Victor's deluxe Livingston. "Golden Throat" tone system and eight-inch speaker combine for perfect reception. Phono jack allows plug-in of record player.

4 Make every student an eyewitness with RCA Victor's great combination of beautiful color and superior black and white in one convenient table model. Remember, RCA pioneered and developed compatible color TV.

5 Show educational 16mm films —sound or silent—and be sure the performance will be professional every time with the RCA 400 Junior Projector. They're easy to thread, operate—give brilliant light and sound.

6 Distribute educational programs, and keep in touch with every classroom through an RCA central control sound system. Portable systems, too, for the widest variety of indoor and outdoor situations. Also a complete line of RCA components.

YOU SHOULD HAVE THE COMPLETE STORY on *all* the audio-visual aids to better teaching (there are many more) available from RCA. Today's your best day to mail the coupon!

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Radio Corporation of America, Camden, N.J.
Please send me a catalog of RCA's educational aids. I'm specifically interested in_____

Name_____ Title_____

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Announce Two New Educational TV Outlets

ANN ARBOR, MICH. — Two new educational television stations in Philadelphia and Puerto Rico have announced plans to join the National Educational Television "network."

WHYY-TV of Philadelphia plans to begin operations on October 1 and WIPR-TV of San Juan, Puerto Rico, expects to be on the air in December.

Opening of the two new stations will bring to 23 the number of educational TV outlets, according to George L. Hall, director of development for the Educational Television and Radio Center. The 21 stations now on the air are affiliated with the center and the new stations have announced intentions to affiliate with the center, clearinghouse for educational television.

Tufts, Cornell Girls Lose Sigma Kappa Charters

BOSTON.—Sigma Kappa, a national college sorority, has withdrawn, by action of its national office, charters from local chapters at Cornell University, Ithaca, N.Y., and Tufts University, Medford, Mass., after indication that these chapters plan to initiate Negro girls this fall.

According to newspaper reports, mimeographed letters of notification from the national headquarters of Sigma Kappa in Indianapolis were sent to officials of both universities and the members of the two chapters. The letters explained that the action had been taken "for the good of the sorority."

According to available reports, Dr. Katharine R. Jeffers, dean of women at Tufts University, was sharply critical of the national council of Sigma Kappa in taking such action without preliminary discussion. Dr. Nils Y. Wessill, president of Tufts University, was much disturbed upon receiving notice of the charter withdrawal.

Officials on the National Committee on Fraternities in Education stated that they believed the Negro girls in the Sigma Kappa cases were the first to have been pledged to national college social sororities.

Indiana Studies Rising Enrollments

RICHMOND, IND. — Dr. Thomas E. Jones, president of Earlham College and head of the Indiana Conference of Higher Education, recently stated Indiana colleges and universities have agreed that with adequate financial support they will be able to absorb expected increases in undergraduate student enrollment through 1965.

Dr. Jones stated that the 30 members of the higher education conference which he heads have studied their enrollment capacities and found that they would be able to meet the expected student demand. Last fall the institutions had 49,994 undergraduate students. A conference study completed in December showed that this enrollment would increase to 71,000 by 1960, and to 92,000 by 1965.

The studies by individual institutions were reported by Dr. Jones to have been made on the basis of adequate financial support for both private and state schools. With this support, it was agreed, the 50-50 balance of undergraduate students between private and public institutions could be maintained, and there would be no need for new colleges in the state. The enrollment projection to 1965 indicated an 8 per cent increase in undergraduates each year.

Dage TV camera, operated by student, picks up scene for transmission in closeup to nearby classroom.

In classroom, the teacher refers a question over the talkback microphone to a student panelist, questions are answered immediately.

DAGE TV AT WORK

At Evanston H. S. TV Workshop

In control room, a student decides which of three pictures on Dage monitor shall be transmitted to the classroom, gives directions to cameramen over his mike and answers questions that come in on his headphones. Full-time TV engineer, at left, supervises student operators and provides maintenance.

Dage closed-circuit television equipment was chosen for the Evanston Township (Illinois) High School. Dage TV will be used to teach English, speech and typing courses this year. To aid the teachers in this project, student production crews were trained in the use of Dage equipment during the summer TV workshop at Evanston H. S.

Dage TV opens exciting possibilities in closed-circuit television instruction. An instructor can teach his special subjects to several classes at the same time. A close-up view of lab experiments can be assured for each student. Students may stay in classrooms and view "assembly" speakers on their TV screens. Get the facts about Dage TV . . . a new dimension in education. Write Dept. 49 for information.

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OUTSIDE NORTH AMERICA: Write C. O. Brandes, Inc., 4900 Euclid Avenue, Cleveland, Ohio

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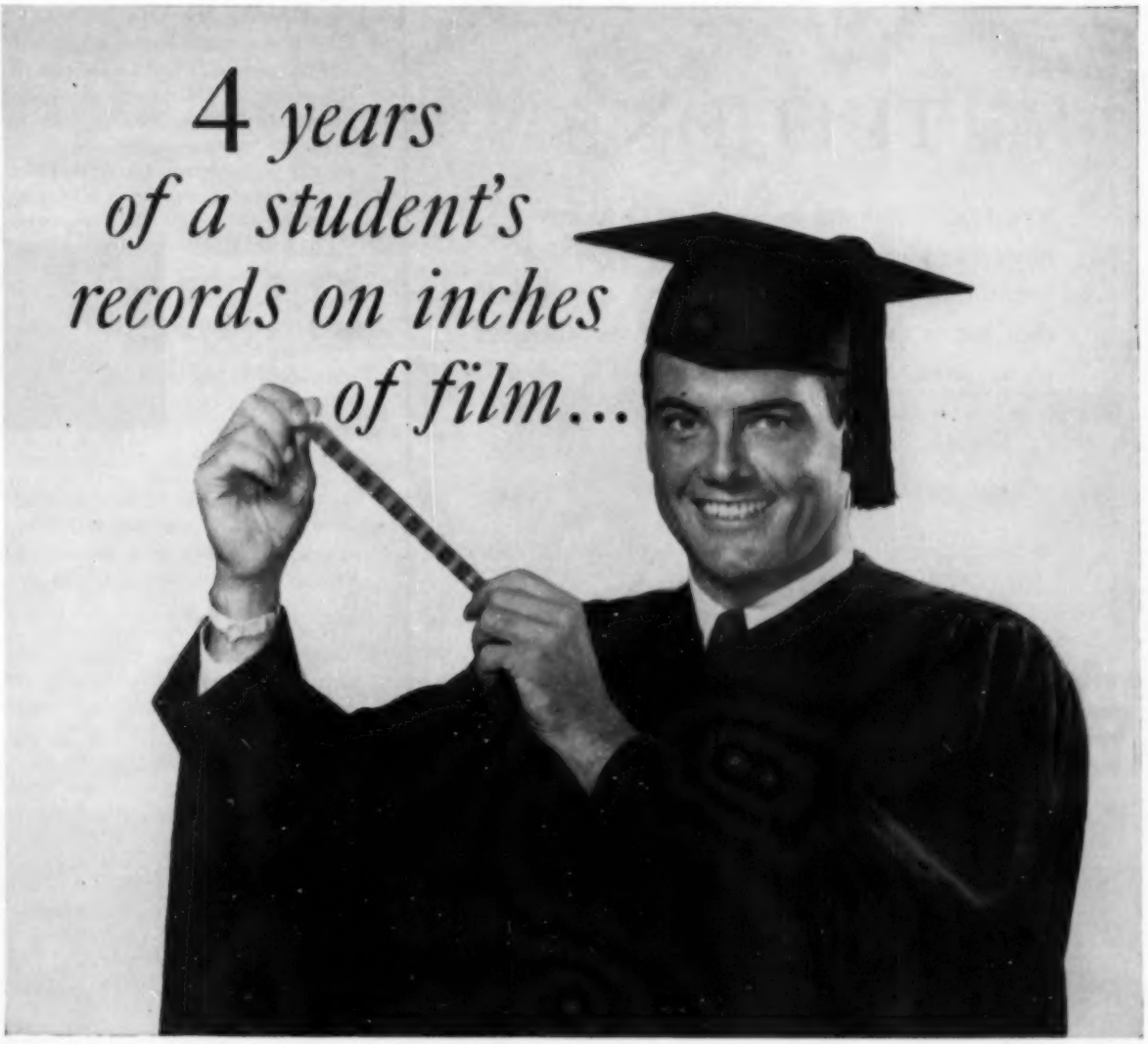

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With college enrollments at an all time high, student and administrative records are using up valuable space at an alarming rate. You can solve your records storage problem swiftly and inexpensively by microfilming with FILM-A-RECORD—the most complete line of microfilming equipment in the industry.

Up to 3700 correspondence size documents—the contents of one file drawer—can be recorded on a single 100 foot roll of 16mm film . . . so small, that it can be held in the palm of your hand. A unique FILM-A-RECORD indexing system and the finest in microfilm readers permit instantaneous reference —*in less time than it takes to search a file drawer!*

FILM-A-RECORD has played an important role in the records program of colleges and universities throughout the country. Send for Case History CH1033 and find out how two of the nation's leading educational institutions derived maximum benefits from their FILM-A-RECORD operations. Write to Room 1946, 315 Fourth Avenue, New York 10, N.Y.

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The Tuition Plan was founded in 1938 to provide a method by which schools and colleges may grant the convenience of monthly payments while they receive their tuition and other fees in full at the beginning of the term. More than 400 schools and colleges have become Associates of The Tuition Plan, and have thereby increased enrollments and materially reduced operating costs.

A descriptive brochure will be sent to schools and colleges promptly upon request.

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NAMES IN THE NEWS

C. Wilbur Cissel has been appointed director of finance and business of the University of Maryland to replace **Charles L. Benton,** who recently resigned to become budget director of the city of Baltimore. **Harry D. Fisher** was appointed controller to fill the vacancy created by Mr. Cissel's promotion.

Leslie W. Scott

Leslie W. Scott, director of the hotel and restaurant schools at Michigan State University since 1950, has been elected a director and vice president in charge of hotel and restaurant operations for the western division of the Fred Harvey organization, according to a recent announcement. Mr. Scott also directed Kellogg Center at Michigan State University.

Howard M. Buckman, treasurer of George School, a Quaker coeducational preparatory boarding school of 450 students near Newton, Pa., will retire from his post in July 1957.

W. A. Zimmerman, business manager of the University of Oregon Medical School at Portland, has been appointed business manager of the dental school as well. **Ted Russell,** former business manager of the dental school, resigned recently. **Fred A. Matthias** has been appointed assistant business manager of both the medical and dental schools with primary responsibilities at the dental school.

Anna M. Tracy

Anna M. Tracy, director of food service at Florida State University for the last 34 years, has resigned to accept appointment as general manager of the food service department of residence at Columbia University, New York City.

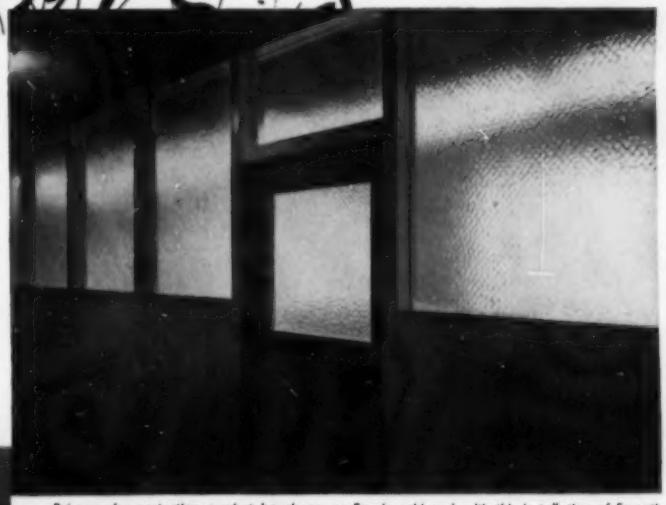
Thomas E. O'Connell, executive assistant to **John Sloan Dickey,** president of Dartmouth College, has been named executive director of the college's trustees planning committee succeeding **Albert I. Dickerson.** The trustees planning committee is engaged in a broad survey of Dartmouth's educational program, plant facilities, future needs, and future educational goals.

Dr. James G. Kelso, formerly associate placement officer of Massachusetts Institute of Technology, has been ap-

Beauty on Duty

California County Hospital Brightens Interiors with 6000 Square Feet of Mississippi Glass

Extensive use of rolled glass in partitions, doors, and windows gives this new San Mateo County Hospital a bright, cheerful atmosphere . . . creates a pleasant environment for staff, patients and visitors. The extreme practicality of glass partitions as well as their unexcelled beauty recommended their installation. The diffusing glass floods rooms and corridors with softened "borrowed light," yet protects privacy. And maintenance is so simple . . . the glass wipes shining "hospital clean" with a damp cloth, never requires repainting.



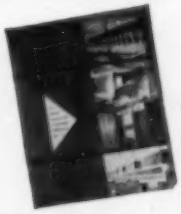
Privacy plus protection against breakage or fire is achieved with this installation of Smooth Rough Misco Wire Glass. Misco, approved Fire Retardant No. 32, tends to help battle up fires.

Architects: Stone, Mulloy, Marraccini & Patterson, San Francisco
Glass and glazing by: San Francisco Glass Company

Clear Polished Misco provides maximum protection with undistorted view. This is widely preferred for windows, doors, skylights.

Structural Corrugated Glass is translucent without being transparent, brightens both rooms and halls with "borrowed light".

When you build or remodel consider the many benefits that only glass can offer you in partitions, doors, windows, skylights. Specify Mississippi Glass. Available everywhere in a wide variety of patterns and surface finishes for every daylighting requirement.



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WORLD'S LARGEST MANUFACTURER OF ROLLED, FIGURED AND WIRED GLASS

pointed placement officer. **Evelyn B. Yates** has been named associate placement officer, and **Mary D. Howe,** assistant placement officer.

W. Emerson Gentzler

W. Emerson Gentzler, assistant provost of Columbia University, has been named executive vice president of the Empire City Savings Bank. Mr. Gentzler has been a member of the board of trustees of the bank since January 1938 and has served on various committees of the board. He will assume his new duties on November 1. Mr. Gentzler has been a member of the Columbia staff for the last 30 years, and is a past president of the Eastern Association of College and University Business Officers.

Jack E. Uhler has been appointed director of food service and instructor in institutional management in the division of home economics at South Dakota State College, Brookings. Mr. Uhler was assistant director of residence halls and food service at Montana State University, Missoula, the past year.

James N. Ewart

James N. Ewart, director of personnel at California Institute of Technology, was elected president of the College and University Personnel Association at its 10th annual meeting at Cornell University last month. Mr. Ewart succeeds **Arlyn C. Marks,** director of personnel service at the State University of Iowa. Mr. Marks becomes ex-officio director of the association.

Roy Ruehle

Roy Ruehle, former director of auxiliary enterprises at Capital University, Columbus, Ohio, has been appointed director of dining halls and residence halls at Wittenberg College, Springfield, Ohio.

Robert S. Linton, registrar of Michigan State University since 1939, has been named to the post of general secretary of the faculties and professor of administration. He has been a member of the university staff for 32 years. **Kermit H. Smith,** assistant registrar, succeeds Mr. Linton as registrar.

Dr. Floyd I. Brewer, since 1947 the director of student activities and the student center at the University of Bridgeport in Connecticut, has been named director of the University of Cincinnati's union building. Dr. Brewer will succeed **Philip R. Campbell,** who has resigned to accept appointment as adviser to men at Texas A. & M. College.

Paul A. Hartley, formerly associate director of nonacademic personnel at the Chicago Professional Colleges of the University of Illinois, has been appointed director of personnel at the University of Miami, Coral Gables, Fla. **George F. McGregor,** personnel officer in charge of the Berkeley campus of the University of California, will succeed Mr. Hartley.

Dr. R. Blackwell Smith Jr., assistant president of the Medical College of Virginia, Richmond, has succeeded **Dr. William T. Sanger,** president of the institution for 31 years. Dr. Sanger is now chancellor.

Henry Yankow has been named business manager of National College

F. W. Olin Hall, Cornell Medical College, Cornell University, New York City

NEW CONCEPT IN CONTRACT FURNITURE

now makes possible SMARTER STYLING,
FINER FABRICS, CABINETRY
and CONSTRUCTION
at REDUCED COSTS!

Now you can furnish lounges, student rooms, public areas in fine Mueller furniture — furniture created by Mueller designers, executed by Mueller craftsmen — to your specifications, to meet your needs. Custom furniture on a production basis means reduced costs regardless of the size of your order.

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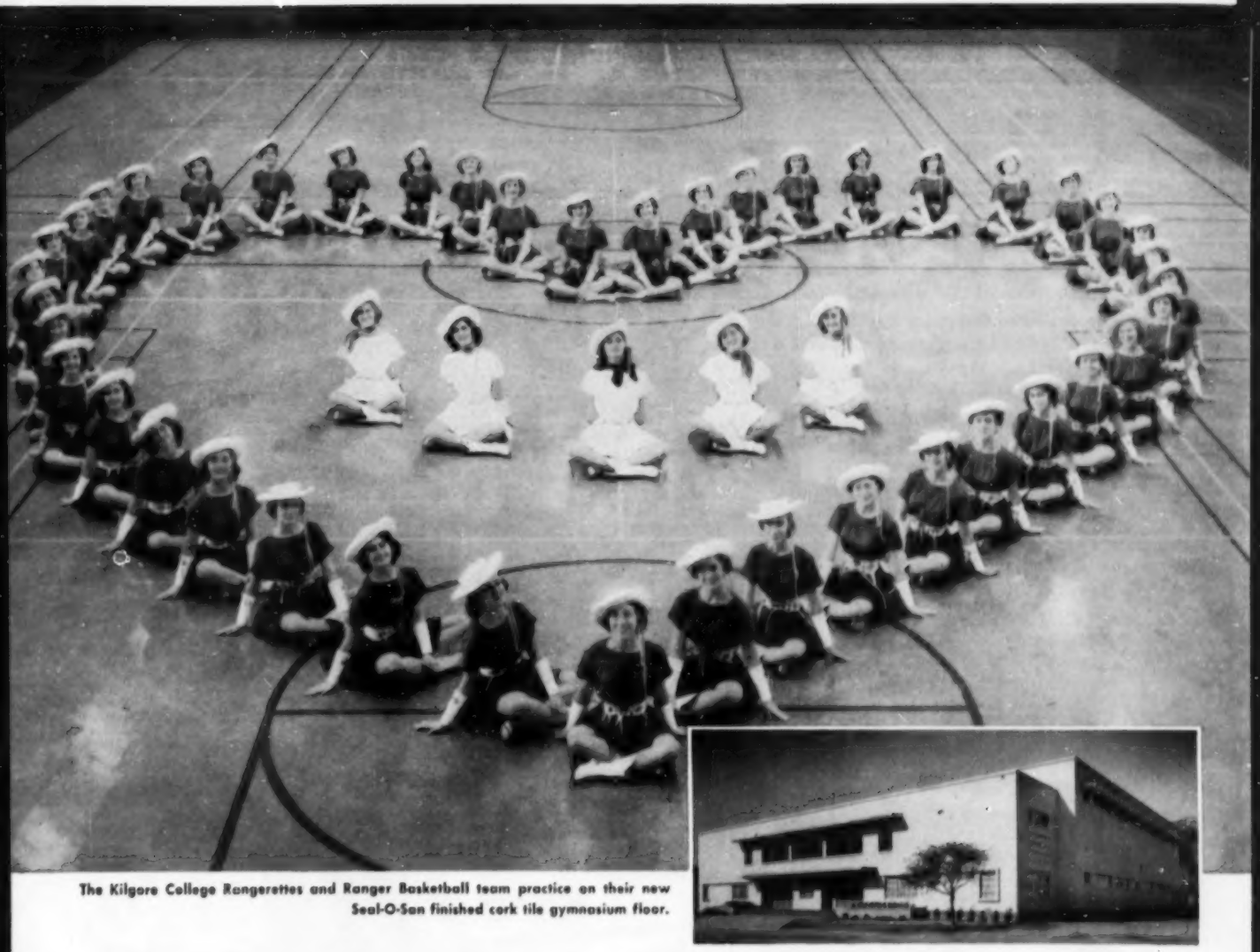
"Available through the E. & I. Cooperative Service Furniture Contract "12".



The Kilgore College Rangerettes and Ranger Basketball team practice on their new Seal-O-San finished cork tile gymnasium floor.

Kilgore College Makes New Cork Tile Gym Safe, Slip-proof with Huntington's Super Seal-O-San®

Kilgore officials decided upon cork tile as the material for flooring their new gymnasium. It had resiliency and the acoustical properties they sought. Their problem was to give this "soft" floor permanence with a sealer that would retain the non-slip quality inherent in cork and keep maintenance costs low.

They selected Huntington Laboratories' Super Seal-O-San, a finish of great durability.

If you are planning a new gym floor, or refinishing an old one, use the coupon below to learn more about Seal-O-San.

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The Kilgore story interests us. Tell us more about the use of Seal-O-San on
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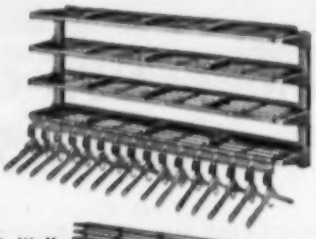
Checker®
COAT and HAT RACKS

Leading architects and outfitters specify Checker Wardrobe Equipment to save space and hold wraps in an efficient, sanitary and orderly manner. Hats rest on high ribs in slotted shelves. Spaced hangers keep coats apart, open to light and air, visible and instantly available. "Portable" units go wherever needed on large casters. "Stationary" units come on glides and can be anchored to floor. All are correctly engineered to interlock on left or right and to stand rigidly. They will never tip over, sag, sway, creak or wobble. Built for lifetime service of strongly welded heavy gauge steel and square tubing. Beautifully finished in modern baked enamel finishes. They are vermin-proof and fire-proof.

Portable "DF" Style Rack on large B.B. casters. Holds 8 or 10 coats and hats per foot—3' 2" —4' 2" and 5' 2" lengths.

Stationary DF Style without casters or cross braces. Units lock together to make continuous double faced rack of any length. Allow 2" for end columns, ⅛" for intermediate column.

Portable "SF" Style Rack on large B.B. casters. Holds 8 or 10 coats and hats per foot—3' 2" —4' 2" and 5' 2" lengths.



"WM" Wall-mounted Racks in 3 ft., 4 ft. and 5 ft. units serve as independent racks or interlock to make continuous wall rack. Accommodate 4 or 5 persons per foot.

Stationary "SF" Style Racks also available in interlocking 3 ft., 4 ft. and 5 ft. sections. Fit snugly against wall — will not tip under heavy loads.

Write for bulletin CK-16

Exclusive Checker Features

New add-on feature — shelves spring-lock to right or left of bracket arms to make racks of any desired length.
Checker Coat Racks can be quickly converted from hanger type to hook type.
New "on hook" tags eliminate checking errors, speed service and prevent empty hangers from being knocked off line.
New beautifully embossed lucite numbers snap onto shelves. Each hat and hanger space is numbered.

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of Education, Evanston, Ill. Mr. Yankow will succeed **Mabel Kearns,** who retires this month after 40 years of service to the college. Mr. Yankow has been instructor and assistant professor of accountancy for the University of Illinois at its Navy Pier branch in Chicago.

T. N. McClure

T. N. McClure, business manager of Knox College, Galesburg, Ill., has been appointed business manager and treasurer of the University of Rhode Island, according to a recent announcement by **Carl R. Woodward,** president of the university. Mr. McClure's appointment will become effective September 15.

Ralph M. Sayre, former acting president of Parsons College, Fairfield, Iowa, has been appointed dean of the College of Idaho at Caldwell. He succeeds **Margaret Boone.** The **Rev. Curtis Westfall** of Frederick, Okla., is now on the College of Idaho administrative staff as director of development.

Stewart S. Howe

Stewart S. Howe, vice president of Illinois Institute of Technology, Chicago, is president of the newly formed development section of the American College Public Relations Association. **Everett H. Hopkins,** vice chancellor of Washington University, St. Louis, and **Arthur J. Schaefer,** vice president of De Paul University, Chicago, are first and second vice chairmen; **Donald V. Stophlet,** secretary of Rockford College, Rockford, Ill., is secretary, and **William H. Crenshaw,** director of development at Texas Technological College, Lubbock, Tex., treasurer.

Kent Dickinson, a member of the staff of the College of Medical Evangelists, Loma Linda, Calif., since 1949, has taken over the position of assistant controller made vacant by the death of **J. H. Nies.**

Henry L. Doten, business manager of the University of Maine at Orono, has been appointed by the governor and his executive council as a member of the Maine Turnpike Authority. Mr. Doten began his professional career as a bridge and highway engineer and is a past president of the Maine Association of Engineers as well as of the Na-

Non-squeak Samsonite Chairs MAKE LESS SOUND than the turning of a page!

The sound of a page turning registered *5 decibels* above the sound level of the room on the Sound Level Meter.

When this student sat on and shook the Samsonite chair, it registered only *2 decibels*...didn't squeak or creak!

Proven by actual audio tests at Farmingdale school

Here is remarkable proof that when silence is needed, Samsonite chairs *stay* silent! Test-participants sat on Samsonite chairs —then went through motion after motion attempting to elicit sound. They squirmed about, turned about—crossed and uncrossed their legs. Yet the super-sensitive Sound Level Meter showed that Samsonite chairs actually *make less sound than the mere turning of a page!* No squeaking, no creaking! Samsonite and only Samsonite has given chairs the *silent treatment* with these exclusive features: Safety-guard seat hinges • Will not tilt or wobble • Replaceable rubber feet • Reinforcing steel cross braces on chair legs • Electrically welded tubular steel construction • Remarkably strong —strong enough to stand on.

Mrs. Mildred B. Gehrke, President of The Board of Education of District 22, Farmingdale, L. I., says, "Non-squeak Samsonite chairs have been used in Farmingdale's music classes for years—*where absolute quiet is essential*. They mean less distraction, increased teaching efficiency!" Write for the new Samsonite Institutional Seating Catalogue, today!

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all-steel chairs in 10 decorator colors

Shwayder Bros., Inc., Institutional Seating Division, Dept. CU-6, Detroit 29, Mich. Also makers of famous Samsonite Luggage, Classroom Furniture and Card Tables and Chairs for the Home

FOR FASTER FLOOR MOPPING *and* REDUCED COSTS...

"FLOOR-PRINCE" Mopping Outfit for mops up to 24 oz.

...specify *Geerpres* the really Efficient Mop Wringer!

See them in action and you'll realize why maintenance men *prefer* a Geerpres to ordinary mop wringers.

They make a tough job easier because of powerful, controlled squeezing action which wrings mops dry in a single operation. Patented design eliminates splashing once-cleaned floors. Moving is effortless because of ball-bearing, rubber casters.

Not only do you save costly labor time, but premium quality materials and construction—such as exclusive corrosion-resistant electroplated finish—assure long service life. Mops last longer, too, without twisting or tearing.

Write now for catalog listing all sizes and types, accessories, and hints for more efficient mopping.

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*"Carillonic Bells"**

RING THEIR SPIRIT-LIFTING HYMNS AT 100 UNITED STATES AIR FORCE BASE CHAPELS ACROSS THE NATION

Schulmerich "Carillonic Bells" are the most honored of all bells. Remember the article, "He Set the Church Bells Ringing" in the April 1955 Reader's Digest? Now their spiritual influence has been enlisted by the Air Force—100 specially engineered Schulmerich instruments will beautify chapel worship for Protestant, Catholic and Jewish airmen—the greatest recognition ever accorded any bell maker.

What next? . . . *honored by installation in your church,* perhaps! Schulmerich offers the world's finest bells, designed for *any* liturgical use in cathedral, church or chapel of *any* faith. Learn how their soul-stirring music promotes religious faith and practice. Write:

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27D47A—Carillon Hill, SELLERSVILLE, PA.

"Carillonic Bells" is a trademark for bell instruments of Schulmerich Carillons, Inc.

tional Association of Educational Buyers.

Alan Marshall, former staff editor of *Newsweek* magazine, has become assistant to the president of St. John's College, Annapolis, Md.

Robert J. Schneider

Robert J. Schneider, lecturer at the University of Rochester and director of its management clinic, has been appointed business manager of Wellesley College, Wellesley, Mass. Mr. Schneider succeeds **Irwin K. French,** who resigned to become executive director of a consulting service of the National Federation of College and University Business Officers Associations.

Wesley Hertenstein, superintendent of buildings and grounds of California Institute of Technology, has had his title changed to director of physical plant, as result of recent action by the board of trustees. The action was taken to describe more accurately the functions performed by the physical plant department and in conformity with the nomenclature used by other educational institutions throughout the country.

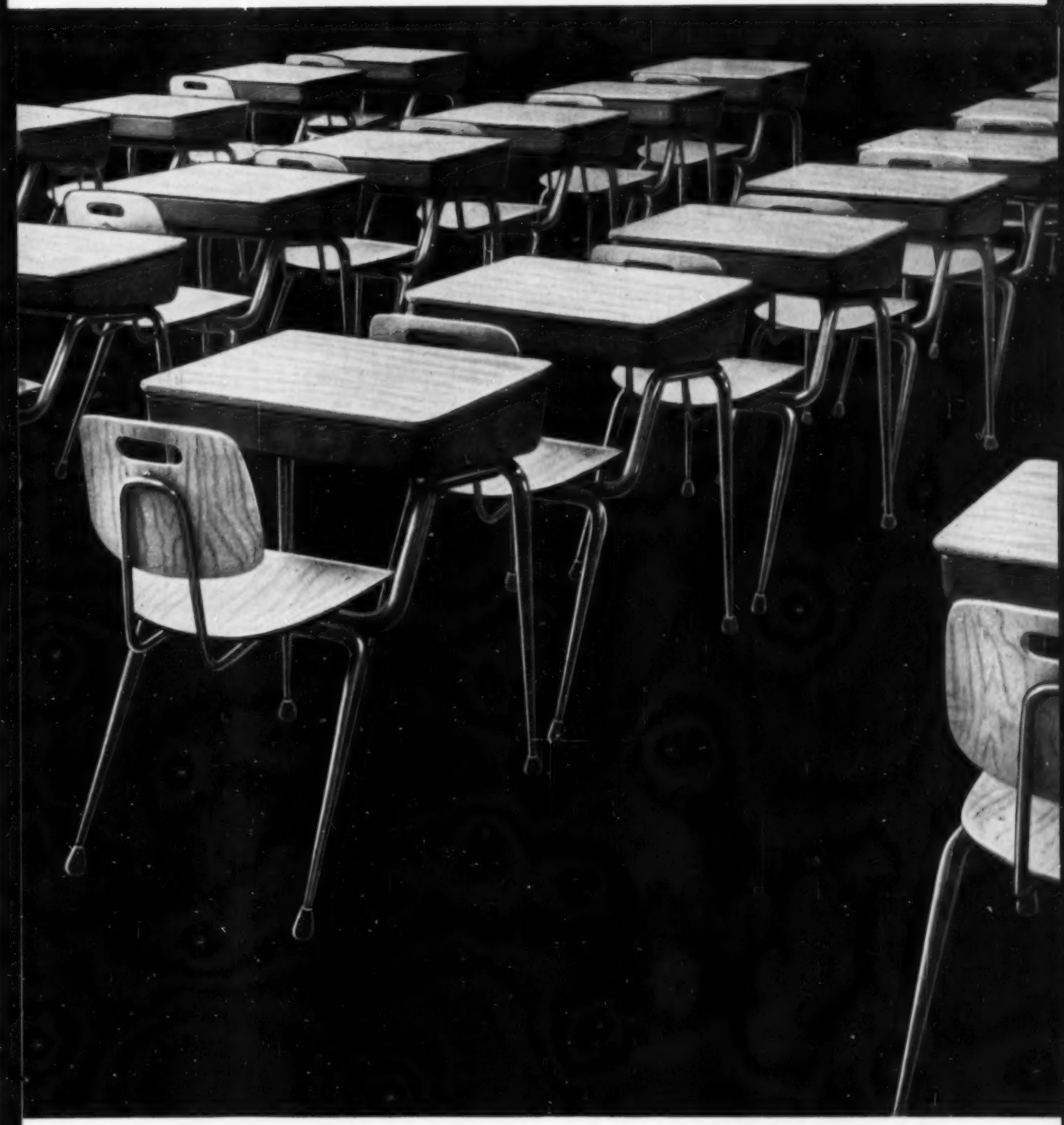
M. Yvon Blanchard

M. Yvon Blanchard has been appointed assistant registrar and director of admissions at the University of Montreal, according to a recent announcement by **Andre Bachand,** director of public relations.

William John Gard Jr., former director of public relations at Washington College in Maryland, has been appointed business manager of Parsons School of Design in New York City. Prior to his Washington College affiliation, Mr. Gard had served as manager of housing at Illinois Institute of Technology in Chicago.

Dr. Edward K. Graham, chancellor of the women's college of the University of North Carolina, has been named dean of the college of liberal arts at Boston University.

Rev. George Zorn, S.J., who has been treasurer of Loyola College at Baltimore, is now treasurer of Wheeling College, Wheeling, W. Va. **Father Robert P. Arthur, S.J.,** formerly director of buildings and grounds at Loyola College, has been transferred to St.



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Direct Prices & Discounts to Schools, Churches, Clubs, Lodges and All Organizations

COMPLETE CATALOG ON REQUEST

TRUCKS FOR FOLDING TABLES

Monroe TS (transport - storage) Trucks make handling and storing of Folding Tables easy and quick. Combination offers.

STEEL FOLDING CHAIRS

Monroe Steel Folding Chairs in attractive range of styles, sizes and prices. Excel in comfort, easy handling and durability. Also full line of non-folding chairs, desks and combinations for classroom, cafeteria and church school use.

PORTABLE PARTITIONS

Monroe's new movable partitions change idle space into useful areas. Smooth Masonite panels, tubular steel frames. Swivel pedestals, casters or glides.

THE Monroe COMPANY
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MAAS-ROWE

AMERICA'S BEST KNOWN NAME IN
Chimes & Carillons

Year after year, more schools, churches and institutions select Maas-Rowe bells, chimes and clock systems than any other make. The more than 25,000 installations attest to their superiority.

HEARING IS BELIEVING! If you are considering the purchase of bells, chimes or accessories, regardless of size, insist on hearing the actual instrument. Let your own ears be the judge.

One of our nearby dealers will be glad to arrange a demonstration. Write for complete details . . .

3015 Casitas Ave.
Los Angeles 39, Calif.

MAAS-ROWE Carillons

Joseph's College, where he is now engaged in teaching. **Rev. Michael Maher, S.J.,** joins the Loyola College staff as director of buildings and grounds and assistant to the president.

Henning Larsen, provost, and **Herbert O. Farber,** controller, of the University of Illinois, have been named vice presidents. **A. J. Janata,** assistant to the president, has had his title changed to executive assistant to the president.

W. Robert Bokelman, specialist for college business management at the Office of Education, Department of Health, Education and Welfare, Washington, D.C., recently announced the availability of a position to be known as specialist in college and university physical plant administration. The new position will be filled from among persons with building and grounds experience.

J. H. Nies, former assistant controller of the College of Medical Evangelists at Loma Linda, Calif., died of coronary heart disease recently. He had been on the college staff since 1951, first as manager of the Loma Linda Hospital and Sanitarium.

Dr. Thornwell Jacobs, 79, former president of Oglethorpe University, Atlanta, Ga., died recently following a long illness. Dr. Jacobs retired in 1943 after playing a prominent part in the development of the university.

DIRECTORY OF ASSOCIATIONS

National Association of Educational Buyers

President: M. T. Tracht, Illinois Institute of Technology; **executive secretary:** Bert C. Ahrens, 1461 Franklin Ave., Garden City, N.Y.

National Association of College Stores

President: Ray Vanderhoef, Iowa Supply Co., Iowa City, Iowa; **general manager:** Russell Reynolds, Box 58, 33 West College Street, Oberlin, Ohio.

Convention: April 23-27, Sherman Hotel, Chicago.

National Association of College and University Housing Officers

President: F. C. McConnell, University of Texas; **secretary-treasurer:** Ruth N. Donnelly, University of California, Berkeley.

National Association of Physical Plant Administrators of Universities and Colleges

President: A. F. Gallistel, University of Wisconsin; **secretary-treasurer:** A. F. Gallistel, University of Wisconsin.

National Federation of College and University Business Officers Associations

President: Nelson A. Wahlstrom; University of Washington; **vice president:** Henry Doten, University of Maine; **secretary-treasurer:** C. H. Wheeler III, University of Richmond.

College and University Personnel Association

President: Arlyn C. Marks, State University of Iowa; **secretary-treasurer:** Elwood C. Clark, Rutgers University; **executive secretary:** Donald E. Dickason, University of Illinois. Permanent headquarters, 809 S. Wright St., Champaign, Ill.; Kathryn Hansen, editor, C.U.P.A. News.

Associations of College and University Business Officers

American Association

President: Harold K. Logan, Tuskegee Institute; **secretary:** B. A. Little, Southern University.

Central Association

President: Roscoe Cate, University of Oklahoma; **secretary-treasurer:** T. N. McClure, Knox College.

Eastern Association

President: Marcus Robbins, Yale University; **secretary-treasurer:** Kurt M. Hertzfeld, University of Rochester.

Convention: Dec. 2-4, Greenbrier Hotel, White Sulphur Springs, W.Va.

Southern Association

President: R. K. Shaw, Florida State University; **secretary:** C. O. Emmerich, Emory University.

Western Association

President: Glen C. Turner, Colorado State College of Education; **secretary:** Harry E. Brakebill, San Francisco State College.

Canadian Association of University Business Officers

President: B. F. Macaulay, University of New Brunswick; **secretary-treasurer:** F. J. Turner, Carleton College.

American College Public Relations Association

President: Bradford D. Ansley, Emory University; **executive secretary:** Marvin W. Topping, 726 Jackson Place, N.W., Washington 6, D.C.

Association of College Unions

President: Earl E. Harper, State University of Iowa; **secretary-treasurer:** Edgar A. Whiting, Cornell University; **editor of publication:** Porter Butts, University of Wisconsin.

Convention: March 31-April 3, Hotel Utah, Salt Lake City.

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With the Varsity Innerspring Mattress and matching Box Spring, you can equip your dormitories for years of comfortable sleep service at a lower cost—and know that you are getting the fine quality inherent in the famous Englander name.

Here at last is the quality answer to strict budgets . . . rising maintenance and expansion costs.

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Check these Quality Features:

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- **Upholstered with layers of high quality garnetted white cotton felt.**
- **Insulated with heavy stitched sisal pads.**
- **Innerroll construction and heavily quilted sidewalls provide sag-proof edges.**
- **Heavy gauge box spring unit mounted on kiln dried hardwood frame, upholstered with white cotton felt and covered with 8 ounce Government standard ticking.**

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Englander manufactures a full line of institutional bedding: Airfoam and Innerspring Mattresses, Box Springs, Metal Dormitory Beds, Dual Purpose Sleep Equipment, King Size Mattresses . . .

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CONTRACT DIVISION
1720 Merchandise Mart • Chicago 54, Illinois

classified advertising

POSITIONS WANTED

House Director or Housekeeper—Experienced in dormitory management, purchasing, maintenance, budgeting, personnel; B. S. degree; excellent references. Write Box CW 309 COLLEGE AND UNIVERSITY BUSINESS.

POSITIONS OPEN

Accountants—In internal auditing with excellent opportunities for advancement; requirements; college degree with accounting major; ability to make audits and write reports; must be friendly, tactful and logical thinker; send for application form. Stanley C. Smith, Auditor, UNIVERSITY OF ILLINOIS, 250 Administration Building (West), Urbana, Illinois.

Assistant Comptroller—Private New England liberal arts college; responsible position offering varied and valuable work experience; age, 25 to 55; sound accounting knowledge required. Write full particulars to: J. K. Robertson, Treasurer, TRINITY COLLEGE, Hartford, Conn.

Assistant Superintendent of Physical Plant.—Man under 45 for newly created position; experience in all phases of plant maintenance necessary; ability to plan and supervise custodial services especially important. Send complete statement of background to Morton A. Rauh, Business Manager, ANTIOCH COLLEGE, Yellow Springs, Ohio.

Assistant to Treasurer—Position now open for qualified man, age 30-40, in rapidly growing group of liberal arts colleges; must possess a minimum of six years experience in college investment handling; the position carries liberal retirement plan, group life and health insurance, and an excellent opportunity for advancement; salary open; give complete information, salary requirement, and recent photo with application to Controller, ASSOCIATED COLLEGES, Claremont, California.

Fund Development Director—Southern state college of 2000 to 4000 enrollment range; requirements: age 30 to 45; fund raising experience; ability to organize and execute fund development as a part of college department of development; must be friendly, tactful and a creative thinker; college graduate preferred. Write Box CO 200 COLLEGE AND UNIVERSITY BUSINESS.

Maintenance Supervisor—For recently built, modern dormitory development on college campus; newly created position; person will have responsibility of organizing, scheduling and administering of maintenance in the development; prefer person with experience in training and supervising of maintenance personnel. Write Director of Residence Services, OHIO UNIVERSITY, Athens, Ohio, or call direct.

Plant Engineer — Director of Operations — Small college in midwest with rather extensive plant desires man with some engineering training and experience to take charge of plant operation and maintenance; college graduate preferred; age to 55; send brief resumé and state salary desired to CO 202, COLLEGE AND UNIVERSITY BUSINESS.

Superintendent of Buildings and Grounds—For church related university in large south Texas city; M.E. Degree or equivalent in experience; write, giving employment and personal history, salary expected to Box CO 201, COLLEGE AND UNIVERSITY BUSINESS.

Rates for classified advertisements: 20 cents a word; minimum charge, $4. Forms close 25th of month.

COLLEGE AND UNIVERSITY BUSINESS
919 N. Michigan Avenue
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...MICHAELS *Time-Tight* EXHIBIT CASES

Michaels exhibit cases, made of extruded bronze and aluminum, are recognized everywhere for their high quality, distinctive appearance, maximum visibility, flexibility of interior arrangement, and other advantages. Innerlocking frames, exclusive with Michaels, mitered intersections, and other structural features, assure protection against ingress of dust and vermin, as well as security against handling and theft. Many types are available: table, aisle, corner, suspended and recessed cases in standard sizes or custom built.

Michaels cases are used extensively by educational institutions, museums, art galleries and libraries. Write for catalog containing complete information.

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Since 1870 the name Michaels has been a symbol of exceptionally high quality

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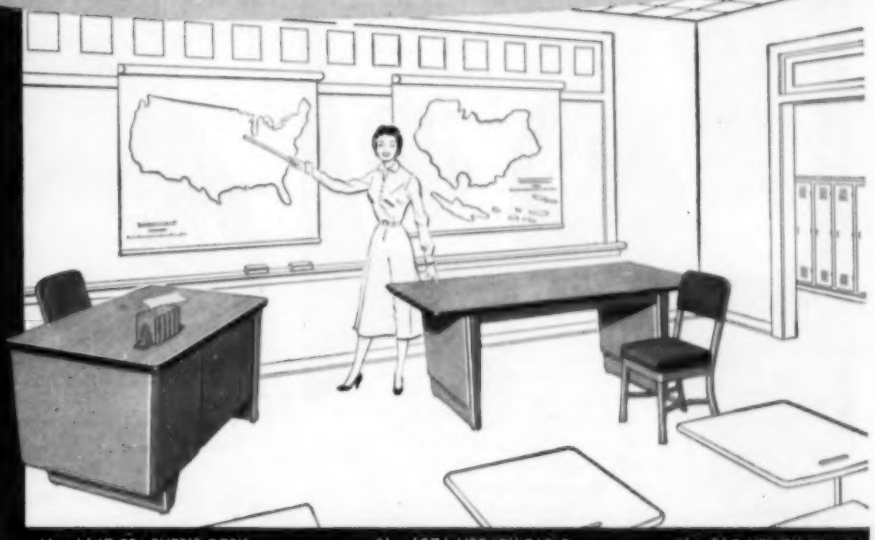
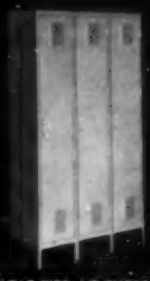


No. 6647 TEACHER'S DESK No. 6276 LIBRARY TABLE No. 810 UTILITY CHAIR



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BOX LOCKERS

ASE Quality — Cheaper By The Year As The Years Go By

ASE Steel School Furniture keeps that "like-new" look year after year. Quality built for service and efficiency. Withstands the wear and tear of youthful activity. Bonderite treated to assure a lustrous permanent finish . . . anchors paint to metal, provides a corrosion-resistant surface. Lastingly beautiful and always in style. For classrooms, offices and libraries. Lockers for halls, locker rooms, field houses. Let us assist you in your planning. Write for information today.

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No. 5401 FILE

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No. 835 PRINCIPAL'S CHAIR

No. 840 Secretary's Chair

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Aurora, Illinois

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WORLD **Hand Dryers**

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It's the most widely used electric hand dryer—all over the world. WORLD dryer fame has jumped the oceans! Hence it's been renamed, "WORLD"... ***(Ask for list of famous users.)***

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Gentlemen: Without obligation send me copies of letters from users, also folder of facts including cost-saving figures and full details on your FREE-TRIAL offer.

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City..... State.....

No. 81

For folding chairs with comfort, rigidity and enduring service

Look to KRUEGER *posture-perfect Series 80!*

No. 82

For all-around comfort, durable rigidity, strength and functional purpose you can't match *this* folding chair. It's Krueger's finest and *your best long-life value.* Non-tipping Y-type frames of heavy-gauge tubular steel are electrically welded into one strong unit that will withstand the hardest usage.

A WEALTH OF FEATURES — Such as vertical frame strengtheners; strong, secure and silent seat stops; unusually large, posture-comfort seats; fully covered safety hinges; and quiet, quick and easy folding action are just some of the many features built into Krueger's exacting engineering standards.

TWO POPULAR MODELS — No. 81, an all-steel chair with contour shaped seat and backrest; No. 82 which features a 5-ply hardwood veneer contour seat with steel backrest. Choice of Beige, Azure Grey or Saunders Green baked-on enamel finish frames—Wood seat, natural satin finish.

THESE DETAILS ASSURE LASTING SATISFACTION

6-inch built-up frame strengtheners — seat spacers provide more rigid bearings at seat pivot point—prevents frame spreading.

Spot-welded steel seat stops capped with rubber bumpers assure positive seat lock —quiet operation when opening or folding chair.

Fully covered safety hinges prevent finger pinching and clothing tears—a safety factor feature many other chairs do not have.

Demountable CHAIR TRUCKS

Four standard sizes hold both X-type channel and Y-type tubular chairs — upright or horizontal. Regular or under-stage models available. Demountable end arms and exclusive chan-angle frame permit stacking empty trucks.

Write

For new, complete line catalog No. 600 as well as brochure No. 100.

KRUEGER

METAL PRODUCTS • GREEN BAY • WISCONSIN

WHAT'S NEW

September 1956
Edited by Bessie Covert

TO HELP you get more information quickly on the new products described in this section, we have provided the postage paid card opposite page 96. Circle the key numbers on the card which correspond with the numbers at the close of each description item in which you are interested. COLLEGE and UNIVERSITY BUSINESS will send your requests to the manufacturers. If you wish other product information, just write us and we shall make every effort to supply it.

Aluminum Folding Partition Has Automatic Operation

Fully automatic operation is supplied in the new R-W Aluminum Automatic

Folding Partition. The use of aluminum panels ensures strength with minimum weight and eliminates the need for decorating and refinishing the panels. The manufacturer describes the panels as offering low design costs, low structural costs and low upkeep costs.

The folding partition consists of 27 sections each three inches thick, four feet wide and 27 feet high. It is powered by a deluxe R-W Electric Operator that is activated by a key-switch control for fully-automatic operation. The embossed aluminum facings are permanently bonded to a resin impregnated honeycomb core in an extruded aluminum frame. The core extends to the full dimensions of the frame, resulting in panels that are extremely rigid and strong, dimensionally stable, not subject to warping and deterioration, yet light in weight. The partition can be made to sizes to fit the need. Pass doors can be installed for easy access to either side of the partition as desired and the panels can be faced with special materials up to any height indicated. The R-W folding partition is stored in a convenient wall pocket at the end of the gymnasium or other area when not in use. The R-W Floor Seal Mechanism seals out noise and locks the partitions in position. **Richards-Wilcox Mfg. Co., Aurora, Ill.**

For more details circle #355 on mailing card.

Floor Machine Is Rugged Yet Light in Weight

The new Tornado 13 inch floor machine gives maximum polishing and scrubbing service yet is light enough to pick up and carry. The free floating double tube handle locks in the upright position for easy transporting or storing.

The Tornado 130 is operated by a single lever switch under the right hand grip with hand fatigue lessened by ample overtravel of the lever. A large rubber bumper around the edge of the machine protects walls and furniture and non-marking wheels make it easy to handle. The Tornado 130 is powered by a ½ H.P. motor and comes complete with brush. **Breuer Electric Mfg. Co., 5100 N. Ravenswood Ave., Chicago 39.**

For more details circle #356 on mailing card.

Fume Hood for Science Classes Is Fully Portable

A completely portable fume hood is offered in the Flexihood No. 2C701R. It can be located at the instructor's demonstration table in front of the class for full visibility during science demonstrations. It can also be shared by biology, chemistry, physics and general science classes. The Flexihood can also be easily moved to desired locations within the classroom for laboratory experiments by

students. A minimum number of hoods can thus do a maximum amount of work throughout the science department.

The Flexihood is 36½ inches long, 25 inches high and 20 inches from front to back. With blower, it is 43 inches long. It is constructed of stainless steel which has a high bake coat of golden phenolic resin finish for stability and maximum corrosion resistance. It has a hinged safety glass viewing panel at the instructor's side and a removable safety glass viewing panel at the student observation side. An open panel is provided at the instructor's side at the base front for access to the material and apparatus. The Flexihood system employs connections to present service or demonstration tables normally found in science laboratories. Fume exhaust can be set up in any of several ways making the system flexible, safe and economical in use. **Kewaunee Mfg. Co., Adrian, Mich.**

For more details circle #357 on mailing card.

(Continued on page 82)

Liquid Detergent for Hand Cleaning

Poly-Wet is the name of a new type of liquid detergent formulated for all general hand cleaning operations. The new concentrated liquid wetting agent detergent is the result of extensive laboratory and field research and is said to be exceptionally effective in hard water areas. It eliminates hard water scum when cleaning fatty or greasy equipment and leaves no film, streaks or spots because of its clean and fast rinsing.

Efficient penetrating and emulsifying properties as well as foam stability are other features of Poly-Wet which may be combined with other acid or alkaline detergents for heavy soil or lime removal. It is non-corrosive, kind to hands and leaves equipment bright and clean. **Klenzade Products, Inc., Beloit, Wis.**

For more details circle #358 on mailing card.

Occasional Chair in Modern Design

The Blactone Occasional Chair, Model 5450, is an addition to the line of modern tubular frame Howell furniture. The comfortable arm chair has No-Sag springs in a deep seat. It is especially suited to use in waiting and reception rooms as well as in dormitories and residence halls. The curved, form-fitting back is affixed by curve-around tubular frame and braces. The modern Blactone tubular legs are welded into a one-piece frame for strength and rigidity. Genuine brass leg ferrules accent the black legs and add to the attractive appearance.

The contour curving arm rests are upholstered, as are the seat and back, in DuPont breathable Fabrilite, an elastic supported vinyl plastic that resists soil and is easily cleaned. The new chair is

available in a choice of more than 35 colors and patterns. Other pieces in the Blactone line have similar design to make attractive room arrangements. **The Howell Co., St. Charles, Ill.**

For more details circle #359 on mailing card.

What's New . . .

Coin Counter Has Increased Speed

Counting speed for the Klopp Coin Counter has been increased 23 per cent

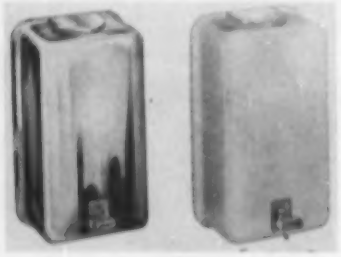
due to design changes. The Klopp Model-DE now delivers 45 coins per second or 2700 per minute with fully accurate count, according to the manufacturer. This time and effort saver for cafeterias and other student activities where charges are made is many times faster in operation than hand counting and assures accuracy while relieving personnel for other duties. The machine can also be used to deliver coins at high speed into wrappers for deposit, affording an additional saving in time and effort. **Klopp Engineering, Inc., 35551 Schoolcraft Rd., Livonia, Mich.**

For more details circle #360 on mailing card.

Soap Dispenser Controls Soap Output

A new U-Set-It dispensing mechanism enables the Bobrick 33CP soap dispenser to release a controlled amount of powdered soap. A turn of a screwdriver in the completely concealed output set screw adjusts soap delivery to the desired amount, from a pinch to a handful. The new model will dispense even the coarsest type of soap powder.

A new self-scouring mechanism and press-down lever prevents messy soap accumulation and eliminates possibility



of water reaching the soap. The container holds 34 fluid ounces and is constructed of triple plated steel in polished chrome finish or white baked enamel. **Bobrick Dispensers, Inc., 1214 Nostrand Ave., Brooklyn 25, N.N.**

For more details circle #361 on mailing card.

Waterless Hand Cleaner Is Kind to Skin

West Waterless Hand Cleaner contains mild, odorless ingredients which dissolve soil, grease, inks, paints and grime from hands yet are kind to the skin. The cleaner with an almost neutral pH, is a white, liquid emulsion containing a relatively large amount of lanolin giving skin a smooth feeling after use. The product contains no harsh alkalis or abrasives and repeated use does not cause defatting of skin. **West Disinfecting Co., 46-16 West St., Long Island, City 1, N.Y.**

For more details circle #362 on mailing card.

Commercial Vacuum Cleaner for Dry Pick-Up

A capacity of two-thirds bushel of dirt makes the new Viking vacuum cleaner effective as a furnace cleaner as well as for all institutional dry pick-up work. It is priced for low cost application and powered by a ¾ h.p. AC/DC motor. Mounted on four three inch ball bearing casters, it is moved without excess effort. The compact size makes the Viking

easily stored and it is adapted to all vacuum operations through use of the complete selection of tools available. **Kent Company, 736 Canal St., Rome, N.Y.**

For more details circle #363 on mailing card.

Fruit Dessert Mix in Low-Moisture Pack

Sun-ripened fruits are processed by the Vacu-Dry system and packed for institutional use. The new Fruit Dessert Mix contains peaches, apricots, apples, pears and enough Maraschino cherry halves to include one in each portion in the cafeteria or lunchroom.

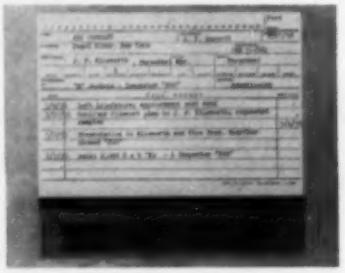
The new mix is offered in low-moisture form and is quickly re-constituted for use, with full flavor. The low-moisture preparation preserves flavor, nutrition and color while reducing shipping costs because of reduced weight, therefore making the product less expensive at point of use. The mix is suitable for use in fruit gelatin desserts or salads, as fruit compote, for cake and ice cream toppings and in many other forms. **Vacu-Dry Company, 950 56th St., Oakland 8, Calif.**

For more details circle #364 on mailing card.

(Continued on page 84)

Microfilm System for Existing Records

Filmsort Transtrip is a new technic for using microfilm with existing records. A clear acetate jacket known as the Filmsort Transtrip is combined with indi-



vidual pockets or chambers for 16 mm or 35 mm film with a special adhesive strip for attaching to file folders or cards in existing systems. Lengths are optional, facilitating the use of Transtrip jackets with any records.

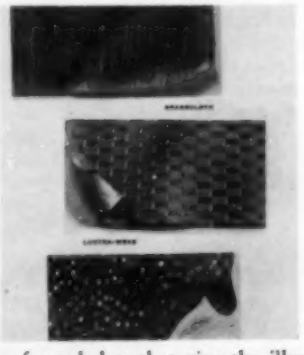
The new system was developed for use where there is a high rate of referrals. A quantity of information, records, copies and the like can be added to existing records without materially increasing their bulk, with the Filmsort Transtrip method. Filmsort readers can be used to view film without removal from the jacket. **Filmsort Div., Dexter Folder Co., Pearl River, N.Y.**

For more details circle #365 on mailing card

Three Attractive Patterns in Vicrtex Vinyl Fabrics

Vicrtex vinyl electronically fused fabrics for wall coverings, furniture upholstery and other areas where attractive but sturdy materials are required are now available in three new patterns.

Grass Cloth is a rough-textured finish with the sheen and textural depth of grass cloth. It is designed for use with either modern or traditional decor. Lustra-weve gives the illusion of satin threads outlining alternating rectangles of a duller surface weave. The third new pattern is known as Mira-Disc, with



many faceted dots that give the illusion of changing shades of color and shimmer. **L. E. Carpenter & Co., Inc., Empire State Bldg., New York 1.**

For more details circle #366 on mailing card.

"Libbey Heat-Treated DATED glasses take all the 'guesswork' out of glassware costs!"

Mr. Ben Atchley
Purchasing Agent
John R. Thompson Co. Restaurants

JOHN R. THOMPSON CO.
Restaurants
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RICHMOND
SOUTH BEND
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WASHINGTON

Libbey Glass Division
Owens-Illinois
Toledo 1, Ohio

Gentlemen:

We here at Thompson's are proud of our chain of 63 restaurants from coast to coast. They include Thompson's, Holloway House, Ontra and Henrici's restaurants serving some 100,000 meals daily. We constantly strive to lower operating costs in order to give our patrons the best possible values.

A number of years ago we standardized on Libbey Heat-Treated glassware service. We were more than pleased with their durability results. We were truly amazed at the facts reported by research investigators who made a physical inventory check of dated Heat-Treated glasses a short time ago in our Holloway House Cafeteria located at 27 West Randolph Street, Chicago.

Mr. Dan O'Connell, Manager of this unit, supervised the check of Libbey dated Heat-Treated glasses in use. He concluded from these tests that -

268 glasses or 36.4% were 1 year or older
466 glasses or 63.6% were less than a year old

Translated into cost figures, Mr. O'Connell estimated that a Libbey Heat-Treated glass averages 1340 servings and costs 4.3 cents per 1000 servings! Dated Heat-Treated glasses take all the "guesswork" out of glassware costs and any operator can now make his own glassware check very easily - thanks to your dated Heat-Treated glass.

Sincerely yours,

JOHN R. THOMPSON CO.

Purchasing Agent

Ben Atchley/gr

For seven years, the code symbol illustrated to the right, below, has been stamped on the bottom of every Libbey Heat-Treated Glass. This has made it possible to trace this revolutionary ware in almost every type of use.

In 1955 a complete audit was made on these glasses in a cross section of restaurants of widely varying types and operating conditions. In the Holloway House Cafeteria in Chicago this survey revealed that, of the 881 glasses checked, the average meals served per glass was 1,340 making the cost per 1,000 servings 4 and 3/10 cents. Amazing proof of the economy of Libbey Heat-Treated DATED glassware.

Mr. Atchley's comments are typical of those made by operators from all parts of the country.

Your Libbey Supply dealer has complete details. See him or write Libbey Glass, Division of Owens-Illinois, Toledo 1, Ohio.

Libbey glasses carry the world-famous guarantee—*A new glass if the rim of a Libbey "Safedge" Glass ever chips.*

You can check your glasses yourself. Just look at the Heat-Treated mark at the bottom of your tumbler. Numerals indicate date of manufacture—numeral at left shows year and numeral at right shows quarter. Add up the number of servings and you'll see how unbelievably economical Libbey Heat-Treated DATED Glasses are.

LIBBEY HEAT-TREATED GLASSWARE
AN (I) PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES · TOLEDO 1, OHIO

What's New . . .

Slide File Box For Bookcase Storage

Kodaslide 400 Filebox for 2 by 2 slide mounts is styled like a book for convenient bookcase storage. The new box contains 16 plastic slide boxes for filing of slides by groups or subjects and the individual boxes tilt back in stepped position for easy removal.

The file box is made of durable plastic with leather grain finish on back and front. It holds 400 cardboard or 176 glass slides. The boxes can also be used as slide receivers. **Eastman Kodak Co., Rochester 4, N.Y.**

For more details circle #367 on mailing card.

Increased Light in Redesigned Fluorescent Lamp

Double the light output of tubes of equal length is claimed for the new General Electric Fluorescent lamp. A revolutionary change in tube design is responsible for the improvement. It features a series of lengthwise dents or grooves along one side of the eight foot tube. The greater light output is said to result from an increase in area of the lighted tube surface, the higher wattage at which the new tube can be operated, and the more effective use of energy within the tube. Known as Power-Groove, the new lamps achieve the gain in light output with no loss in efficiency. **General Electric Company, Nela Park, Cleveland 12, Ohio.**

For more details circle #368 on mailing card.

Animal Cage Washer for Research Laboratory

A completely automatic animal cage washer is now available for use in research and other institutional laboratories. It occupies a minimum of floor space and can be installed as a single unit in one or more locations or in groups of two, three, four or more in one central location.

The Ransomatic can clean up to forty cages per hour, saving personnel time and energy and resulting in efficiently cleaned cages, animal feeders and other laboratory equipment. **Ransohoff, Inc., 1002 Ford Blvd., Hamilton, Ohio.**

For more details circle #369 on mailing card.

(Continued on page 86)

Distilled Water Heater Thermostatically Controlled

Distilled water is kept hot automatically in the new Barnstead Distilled Water Heater. An adjustable thermostat maintains the water at the desired temperature, ready for instant use.

Constructed of copper, lined with pure block tin to prevent metallic contamination, the tank has a removable cover. It has a capacity of 1½ gallons and the exterior finish is satin nickel plate. The dial type thermometer operates from 30 to 240 degrees F. The heater is available

for 110 or 220 volts and a pilot light indicates when the current is on. **Barnstead Still & Sterilizer Co., 2 Lanesville Terrace, Forest Hills, Boston 31, Mass.**

For more details circle #370 on mailing card.

SOUND

LECTERN

Complete PUBLIC ADDRESS SYSTEM built into beautiful WALNUT LECTERN

With Retractable Casters (Optional)

Move it ANYWHERE —plug into AC and IT IS READY FOR USE

Lapel Microphone Recorder, Phonograph, External Speakers, may be added.

Indispensable for conducting classroom instruction, music appreciation and public speaking courses . . . and every auditorium. A wonderful gift from an alumni association!

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106 MAIN STREET · MADISON N. J.

TUBULAR STEEL FOLDING CHAIR NUMBER 77

UPHOLSTERED SEAT

BETTER BUILT FOR LOW COST MAINTENANCE

Sky high in style, down to earth in price, Hampden is the answer to public seating that requires smart, modern appearance at an economical cost. Handsome styling, strong, rugged construction, comfortable seating should make Hampden your first choice.

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Hampden SPECIALTY PRODUCTS, INC. EASTHAMPTON · MASSACHUSETTS

Science Building, Western Illinois State College, Macomb, Illinois
Architects: Hewitt & Bastian
Contractor: Tunnicliff Construction Company
Equipped with Adlake Reversible Windows

Another **Adlake** aluminum window installation

Adlake
PROVEN QUALITY WINDOW
This window meets or exceeds all quality industry specifications for aluminum windows
The Adams & Westlake Company
Elkhart, Indiana

- **Minimum air infiltration**
- **Finger-tip control**
- **No painting or maintenance**
- **No warp, rot, rattle, stick or swell**
- **Guaranteed non-metallic weatherstripping (patented serrated guides on double hung windows)**

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99th year
of serving the transportation, building and control industries

The Adams & Westlake Company

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What's New . . .

"Electric Eye" Camera Sets Lens Automatically

A new development in motion picture cameras is introduced with the Model 200-EE Bell and Howell "Electric Eye"

camera. Operating on the same principle as the human eye, the lens iris is automatically opened and closed to adjust to varying indoor or outdoor light intensities through a photo-electric cell or electric eye. No experience is needed to ensure properly exposed film with the new camera, making it possible for students as well as instructors to take classroom, athletic or other shots. There is even a warning flag which drops into the viewfinder to warn the operator when light is inadequate for proper exposure. If desired, the camera may be operated manually without the electric eye.

The camera has all of the excellent features of the standard Bell and Howell 16 mm motion picture camera in addition to the automatic lens adjustment provided by the electric eye. Six tiny Mercury cells or batteries in the base of the camera energize the electric eye. The life of the batteries is stated as a minimum of one year and replacements are easily made when required. **Bell & Howell Co., 7100 McCormick Rd., Chicago 45.**

For more details circle #371 on mailing card.

Packaged Incinerator Burns Smoke

The new packaged Brulé Model M-10 All-Purpose Incinerator with HY-FA is designed with two rear chambers beyond the firing chamber. Here smoke, soot, odors, embers and sparks are incinerated and fly particles are centrifuged out. It is designed to incinerate all types of waste, dry, intermixed or wet, with clean operation within a wide diversity of local conditions including draft, type of load and rapidity of burning. A minimum of attention is required for efficiency.

The Model M-10 is prefabricated, lined throughout with high temperature insulating refractory, lined vent parts, dampers, burners and other equipment required for local installation. The component parts can be assembled and bolted for operation on the job. Sizes to handle all requirements are available. **Brulé Incinerator Corp., 407 S. Dearborn St., Chicago 5.**

For more details circle #372 on mailing card.

(Continued on page 88)

Study Top Desk of Tubular Steel

The new Model 770 Study Top Desk has a large 18 by 33 inch desk top of hardwood plywood. It is also available with plastic top if desired. Ample book storage space is provided by the two steel compartments, each 11 inches wide, at the side of the desk. Rigid support without interfering with leg room is provided by the heavy-gauge tubular steel cross supports of the desk frame.

The new desk is offered in eleven sizes from 20 to 30 inches in height. Metal finishes are available in coral, sage green,

dove gray, beige or ocean blue. The desk design matches that of the Model 740 Griggs tubular steel chair. **Griggs Equipment Co., Belton, Texas.**

For more details circle #373 on mailing card.

As Specialists in College and University Securities, We . . .

★ Act as financial consultants, offering professional advice on debt planning, forms, markets, etc.

★ Set up and prepare bond issues and loans, supervising all details to actual delivery.

★ Furnish market studies, with recommendations as to advantageous placements or distributions.

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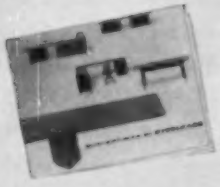
Convertibles by STEELCASE

for an office mood of cheerful efficiency

Steelcase Convertibles are ready for expansion at any time . . . That's why they're perfect for both today's school offices and for the new requirements of tomorrow.

When you use Steelcase Convertibles, there's no need to concern yourself with the problem of trying to fit present office furniture into larger or rearranged areas. At a moment's notice, without "skilled" labor, Steelcase Convertibles can be taken apart and rearranged to fit new settings.

For instance, in the illustrated administrative grouping, the spacious 96 inch top can be easily removed from the cabinets and other cabinets added or substituted. Or a smaller top can be used by regrouping cabinets. To this mobility, add smart colorful styling and you can see there's a place for Convertibles in your future.



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What's New . . .

Roll-O-Matic Chair Stands Fold in Minimum Space

Minimum storage space is required for the new Berlin Roll-O-Matic Chair

Stands. They are readily rolled out for use, giving efficient entrance and exit space with a full 30 inch back-to-back measurement. The eight inch risers assure excellent vision from each seat. Students can sit in relaxed comfort on the stands which are designed to meet all existing codes and are made with fireproof material throughout. **Berlin Chapman Co., Seating Div., Berlin, Wis.**

For more details circle #374 on mailing card.

Drapery Fabric Controls Sun Glare

Translucent Cloth is the name of a new fireproof drapery material designed for the control of sun glare. Normal daylight illumination is permitted when the material is used in correct fullness, and ventilation and outside viewing are combined with adequate privacy. The fabric may be washed or cleaned by any method, without stretching or shrinking, is exceptionally color fast and resists fume fade. Fifty inches wide, Translucent Cloth has excellent draping qualities, a pleasant soft feel and is available in six colors. **Edwin Raphael Co., Inc., Holland, Mich.**

For more details circle #375 on mailing card.

Swimming Pool Filter Takes Minimum Space

The Centri-Mite Diatomacious Earth Filter No. 2304 is a compact new filter for swimming pools which occupies only two square feet of floor space at its base. It is 4½ feet high and has ten square feet of filtering area which is said to be enough capacity for a 20 by 40 foot pool. The filter element is readily accessible for easy cleaning. Increased capacity in the filter elements is available for larger pools, still maintaining minimum space for installation. **Swimquip, Inc., 3301 Gilman Rd., El Monte, Calif.**

For more details circle #376 on mailing card.

Lightweight Cleaner for Dry Pick-Up

The new D-110 vacuum cleaner is an inexpensive, lightweight unit for dry pick-up. It is readily portable and equipped with a 30 foot, 18 gauge, 3 conductor cord of non-marking rubber with molded rubber plug. A strain reliever cushions the cord against sudden pulls and strains. The vacuum cleaner weighs only 29 pounds and is easily rolled in any direction on four swivel-type casters.

Powered by a universal type ½ h.p. motor, suction is created by a two-stage turbine which develops a 66 inch water lift at the end of a 1½ inch hose, eight feet long, with closed orifice. The all-

welded steel tank has ½ bushel capacity. A perfect seal between tank and cover is ensured through the use of easy on-off latches. **Multi-Clean Products, Inc., 2277 Ford Pkwy., St. Paul 1, Minn.**

For more details circle #377 on mailing card.

(Continued on page 92)

Correct

Rug & Carpet CARE

Wool fibers need Tinolan Process

STOP DESTRUCTIVE USE OF Scrubbing—Soaps—Detergents

Tinolan process does not mat the pile but restores rugs and carpets previously mistreated.

COSTS LESS than scrubbing . . . is easier . . . without removing carpets or rugs . . . no expensive heavy equipment . . . no hard labor.

CLEANS & FLUFFS pile fibers . . . no felting . . . maintains new condition . . . and mothproofs too at no extra cost. Safe on twists.

DEVELOPED to restore and condition priceless wool rugs and tapestries in one of the country's leading Museums.

Tinolan Process is now used in many leading Colleges and Universities. Write for full information.

TINOLAN

The Tinolan Company of America, Inc., Wallingford Rd., Media, Pa.

Those who make a living feeding or housing know the value of interior design . . . by mandel

Mandel Brothers Contract Division has long been management's source for the best in interior design, as well as functional, up-to-date furnishings. Mandel Men have helped many realize the most from building or remodeling budgets.

When yours is a problem of making your premises more inviting, call a mandel man.

Experienced in Designing and Furnishing Complete Installations

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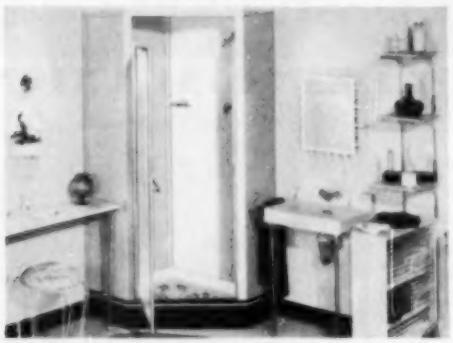
WEIS

...the shower of many blessings, many styles

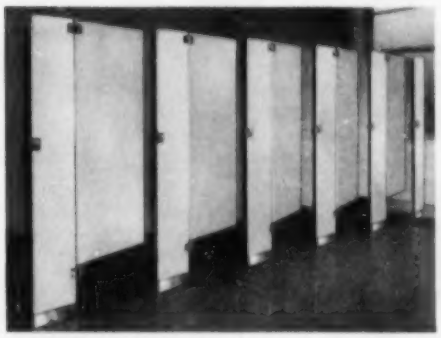
WEISWAY built-in cabinet showers are the ultimate in economical installations of this type. They eliminate the need of building a water-tight room because they are independent leakproof enclosures. Choice of colors... vitreous porcelain or terrazzo receptor.



WEISWAY corner model cabinet showers save space, yet provide a roomy bath as well. They also are available as built-ins. Glass doors or curtains are optional with all Weisway cabinet showers. Choice of colors... vitreous porcelain or terrazzo receptor.

WEISWAY free-standing cabinet showers are also available in several models.

toilet compartments... for finest quality and low-cost maintenance



WEISART floor-braced style is especially popular for remodeling jobs, as well as new construction. Note clean lines for easy maintenance, and the absence of head rails. Rigid, sturdily constructed for years of trouble-free service. Choice of 24 oven-baked enamel colors. Brass hardware is chrome plated.

WEISART ceiling-hung style combines modern appearance with sanitation. No dirt-catching corners, no posts to interfere with floor maintenance. Completely rigid. Made to withstand use and abuse. Choice of 24 oven-baked enamel colors. Brass hardware is chrome plated.

OTHER TYPES also available. See catalog for specifications.

WEIS

toilet compartments and cabinet showers for schools, institutions, industry and home.

SEND FOR CATALOG

Fill in coupon and mail for further information about both Weisway cabinet showers and the full line of Weis toilet compartments.

HENRY WEIS MANUFACTURING COMPANY, INC.
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Magnesium
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Chairs That Fold

Model 481 Chairs in the Purdue Memorial Union Building, Lafayette, Ind.

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Institutions choose Model 481 because they want comfortable seating that will last a lifetime! These chairs are rugged . . . with die-cast Magnesium frames and the famous Rastetter hinge and brace construction. Beautifully designed, they are ideal for use in schools, cafeterias, hospitals, hotels and clubs, where use often means abuse. They provide better seating whether they are ever folded or not.

Rastetter Solid Kumfort Chairs That Fold are made in both Wood and Magnesium in many attractive styles. They may be moved quickly and easily where rooms are used for several purposes.

Write for portfolio showing complete line and giving interesting facts on better seating.

THE SOLID KUMFORT FOLDING CHAIR ®

Chairs That Fold...

LOUIS RASTETTER & SONS COMPANY

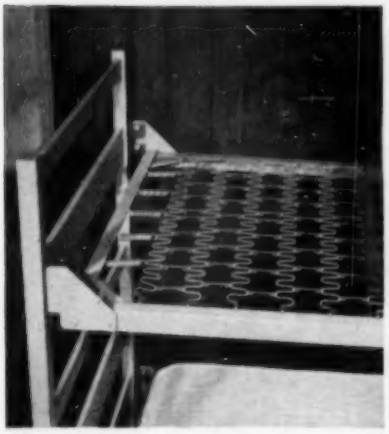
FINE FURNITURE THAT FOLDS • **ESTABLISHED 1881**

1326 WALL STREET • FORT WAYNE 1, INDIANA

Michigan State University has
3500 No-Sag units now; plans 2000 more!

Butterfield Hall, M.S.U.

Maintenance-free No-Sag Springs bring new comfort and economy to dormitories!



Cutting dormitory costs is assured with No-Sag Springs! In addition to low initial cost, No-Sag units are uniquely constructed to be maintenance free. Too, No-Sag is ruggedly built of heavy-duty high carbon steel to withstand generations of student use. Finally, sleeping on No-Sag is comfort itself! These features help explain why more and more leading universities and colleges, such as those named on the right, are specifying No-Sag units for their dormitory needs. For further information on No-Sag construction and costs, write to—

No-Sag is orthopedically engineered. Reports from physicians indicate backache complaints and discomfort virtually disappear when No-Sag "posturized" units are installed.

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21590 Hoover Road
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Dealer and contractor inquiries welcomed

Hope College
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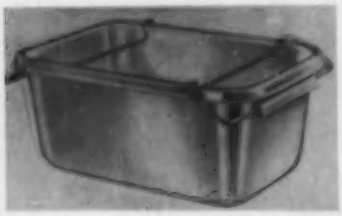
Central Michigan College of Education
Augustana College
Kent State University
Tulane University
Oberlin College
Ball State Teachers College
University of Detroit
Michigan College of Mining and Technology
Berkeley Baptist Divinity School
Berkshire School
Bowling Green State University
University of Oklahoma
Muskingum College
Iowa State Teachers College
Ohio University
Carroll College
University of Mississippi

What's New . . .

Small-Sized Tote Box of Wear-Ever Aluminum

Designed for use in transporting and storing meats, poultry, fruit, vegetables



and other foods, the new Wear-Ever Aluminum Tote Box is light in weight and easy to handle. The small-sized box is 24 inches long and has a width outside top of 16⅛ inches. It is designed for secure stacking when filled and space-saving nesting when empty. It is easy to lift and carry the small-sized Tote-Box, even when filled. Boxes can be stamped at the factory with name and checking numbers without extra cost. **Aluminum Cooking Utensil Co., Inc., New Kensington, Pa.**

For more details circle #378 on mailing card.

Electric-Powered Collators in Improved Design

Thomas Collators, designed to assemble duplicated sheets into sets, are now available in a new line of electric-powered machines. They consist of eight, ten and sixteen sheet floor models and twenty and thirty-two sheet tandem models. Highlights of the new machines include foot button for smooth feeding; Speed Load Control for fast, easy loading; redesigned bin assembly for increased paper capacity per bin; Rotating Feed-Fingers for more positive operation, and the attractive new housing design.

Plextone Gray is a new multicolored coating recently selected as the standard finish on all models of Thomas Collators. It provides a heavy protective coating which resists chipping, cracking and abrasions. Composed of gray, white and black pigments, the finish blends into a gray tone. **Thomas Collators Inc., 50 Church St., New York 7.**

For more details circle #379 on mailing card.

Convertible Unit for Seating or Eating

Comfortable seating for five pupils is provided with the Seat-Eat in bench position. It can take its place with lines of chairs for classroom or auditorium purposes. For study or for cafeteria or lunchroom use, the back of the unit is quickly swung over the top, providing a sturdy table. The conversion is handled through an automatic self-locking device which is released only by operating the lever. Turning the chairs from the row in front and using those in the row behind the table gives lunch or study seating for ten pupils. The unit can be converted for the desired use in a matter of seconds, without the necessity of moving the base. It is available in two adult sizes and two children's sizes.

The table top of natural wood grain plastic is food-acid and heat resisting. It is long wearing and easily cleaned. Heavy

steel in a tan splatter finish is used for the base and bench portions of the Seat-Eat unit. **Seat-Eat Incorporated, 1166 W. Peachtree St., Atlanta, Ga.**

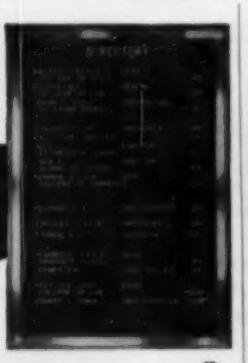
For more details circle #380 on mailing card.

(Continued on page 94)

100

DIFFERENT SIZES, STYLES OF BULLETIN BOARDS AND CHANGEABLE LETTER BOARDS

BY DAV-SON



A Dav-Son board for every job. Changeable letter directory and announcement boards, black boards, menu boards, others. Sturdily constructed, every Dav-Son board is built to last, with quality built-in for years of service.

Dav-Son Changeable Letter Directories for Lobby, Office, Outdoor Use.

- Wide Variety of styles and Sizes
- Glass Enclosed Front
- Hardwood or Metal Frames
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- Absolutely Warpproof
- Also Available with 5' 8" Standards

Dav-Son Genuine Self-Sealing Cork Bulletin Boards

- Indoor and Outdoor Styles
- Hardwood or Metal Frames
- With or Without Locking Glass Doors
- World's Largest Selection

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DAV-SON

Dav-Son Changeable Name Plate Black card with white letters under beveled plexiglass shield. Triangular wood base in choice of Walnut, Oak, Mahogany, Blonde or Steel Grey finish. 10¼"x3¼".

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INSIST ON DAV-SON—YOUR BEST BUY!

Accepted Procedure . . .

against Athlete's foot with modern DOLGE Fungicides

DUSTING Alta-Co Foot Powder on the feet and inside shoes

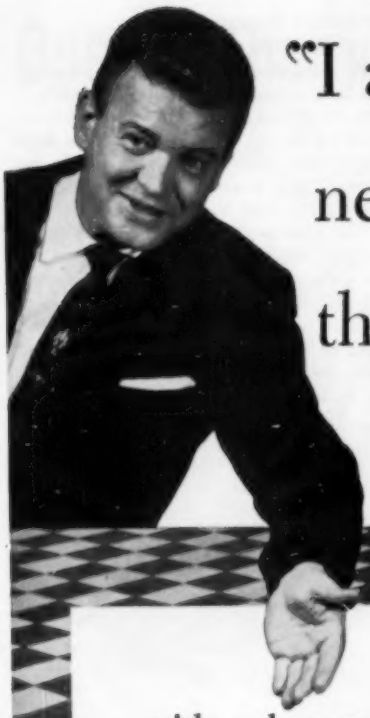
FOOT BATH Alta-Co Powder dissolved in water for group prophylaxis

FLOOR WASH H.D. Fungicide diluted in 300 parts water—mop on floor

Write for Booklet on Athlete's Foot Control

DOLGE

WESTPORT, CONNECTICUT



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....*and they did!*

with a demonstration that proved STYLE *IS* new... and *different* from any other floor finish.

The important difference is that STYLE keeps its original, "newly-waxed look" much longer – *why?*

- STYLE doesn't wax-scuff – because STYLE isn't a wax . . .
- STYLE doesn't "hold" dust and dirt because it doesn't contain sticky resins or soft waxes . . .

and *this important difference:* although wax-free, *STYLE can be buffed* like a wax—can be maintained either with or without buffing, as desired.

And STYLE can be easily removed and renewed—contains no spirituous solvents; won't harm any floor.

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Gentlemen: I'd like a free demonstration of your new STYLE floor finish.

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Vestal
INCORPORATED
ST. LOUIS 10, MO.

What's New . . .

Sanitary Dispenser for Jumbo Unwrapped Straws

The Duplex Straw Dispenser is now available in the JS-20 Jumbo Model for

dispensing unwrapped 6¼, 8½ Jumbo and 8½ inch Super Jumbo Straws. The all stainless steel device dispenses one unwrapped straw at a time from both sides of the dispenser with complete sanitation. It was developed to health board specifications and is designed to reduce the cost by dispensing unwrapped straws in a sanitary manner. The dispenser is also available for use with regular sized and ordinary jumbo straws. **Duplex Straw Dispenser Co., 511 N. La Cienega Blvd., Los Angeles 48, Calif.**

For more details circle #381 on mailing card.

Fluorescent Fixture Hugs Ceiling

The new Commonwealth thinline fluorescent fixture is only three inches deep. Although surface mounted, it gives the effect of being recessed, thereby permitting installation in new construction, remodeling or modernization where minimum ceiling heights pose a problem. The Commonwealth has a Corning No. 70 lens and has the ballast in the end. It is available in one to eight lamp sizes, with or without opaque light panels at sides. The glass frame swings down for easy access and maintenance and and the surface is easily mounted. **HOLDENline Co., 2301 Scranton Rd., Cleveland 13, Ohio.**

For more details circle #382 on mailing card.

Patented Screw and Washer for Leaky Faucets

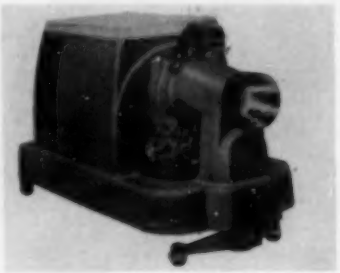
The new Sexauer Monel Self-Locking Screw with expanding nylon plug imbedded in the threads is designed to lock automatically at the correct depth to hold a faucet washer firmly. When used with the new Sexauer patented Easy-Tite faucet washers made of duPont Neoprene specially compounded to withstand extra hot water, minimum maintenance is required to keep faucets operating efficiently. The new Monel Self-Locking Screws resist corrosion, do not rust and can be easily removed when necessary. **J. A. Sexauer Mfg. Co., 2503 Third Ave., New York 51.**

For more details circle #383 on mailing card.

Projector Designed for Filmstrips and Slides

A combination auditorium projector has been engineered to project both 35 mm filmstrips and two by two slides. Viewlex Model V-1000 C handles both single and double frame filmstrips for vertical and horizontal projection and two by two and bantam slides.

The new model projects bright, sharp images, yet stays cool in operation by the new system of pressurized air cooling. The cooling fan lies in a vertical position and draws cool air from the front of the projectors, passes it over the film plane, condensing lenses and over the lamp and expels it through special



side louvers. The projector is equipped for individual front leg level-control. **Viewlex Inc., 35-01 Queens Blvd., Long Island City 1, N.Y.**

For more details circle #384 on mailing card.

(Continued on page 96)

Cutting units can be raised to a vertical position for transporting or storage.

Compare!

Arrange for a FREE demonstration today. See how a LOCKE does it better in half-the-time!

Cut and Trim . . . faster, cleaner, more economically

Ease of handling and flexibility, coupled with narrow overall width, practically eliminates hand trimming. Locke does a complete job *in one operation* without streaks or rolled down uncut grass. It's the answer to cutting out mowing problems and cutting down labor costs and physical exertion.

America's Most Wanted Power Mowers!

- Overhangs raised borders ⅓ their width
- Turns at any angle, without raising cutters
- Controls conveniently placed
- Model 70-75 available with reverse gear transmission
- Powerful, quiet B & S engine

Choice of 4 Basic Sizes:

SINGLE—25" or 30" *TRIPLEX—70" or 75"*

Add sulky, in a minute, whenever desired.

Send for literature and name of nearest LOCKE Dealer.

Locke POWER LAWN MOWERS

Since 1928

Handle Easily . . . Save Time — Money — Energy

1321 CONNECTICUT AVE., BRIDGEPORT 1, CONN.

One teacher *plus* DITTO® *equals* more teachers

Welcome help for teacher shortage

The teacher shortage threatens to become worse. The mounting birth rate promises to increase school enrollment tremendously. Even with increased state and federal funds, there is still a grave question of whether trained teachers can be turned out fast enough to meet the probable demand.

DITTO and DITTO Workbooks provide an immediate and practical way of easing the teacher shortage. Together they cut the time required for lesson planning and preparation—give the teachers more time to teach—free teachers for actual classroom instruction—virtually add more teachers to your staff.

And together they boost teacher morale—give your teachers more time for themselves—more time for self improvement—more time for relaxation—more time for doing the things they want to do.

For help in easing the teacher shortage,

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. . . For Reproduction on Liquid Machines. An outstanding DITTO service for lightening the teaching burden in every grade and every subject. Written by teachers—edited by nationally recognized educators. Each $3.25. Choose from any of the splendid new titles in the DITTO Workbook Catalog. Send for free sample copies.

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- ☐ Send Literature on your new D-10 Liquid Type School Duplicator.
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What's New . . .

Literature and Services

• The **"Modern Mimeographing Handbook"** gives valuable "how-to" advice on preparing stencils. Useful information from how to lay out a mimeograph department and care for the duplicator to selecting special stencils for specific jobs is contained in the booklet available from A. B. Dick Co., 5700 W. Touhy Ave., Chicago 31.

For more details circle #385 on mailing card.

• The colors and patterns of **St. Regis Panelyte Decorative Laminated Plastic Surface** are illustrated in an 8-page catalog available from St. Regis Paper Co., 230 Park Ave., New York 17. Printed in full color, the catalog carries illustrations of St. Regis Panelyte in use in institutions, line drawings showing Panelyte installation details and charts giving test and application data on this attractive, impervious laminating material.

For more details circle #386 on mailing card.

• **"Turkey's on the Menu"** is the title of a full color 16 mm motion picture released by the National Turkey Federation, Mount Morris, Ill. It illustrates various phases of institutional turkey cookery and preparation. The 22-minute film explains that proper cooking of turkeys can reduce shrinkage and effect greater yields of cooked, edible meat. Dozens of turkey dishes are shown.

For more details circle #387 on mailing card.

• **Orchestra Uniforms in stunning colors** are illustrated in a folder by Ostwald Inc., Ostwald Bldg., Staten Island 1, N.Y. The different styles of uniforms available for men and women are modeled with full descriptive data.

For more details circle #388 on mailing card.

• Many mechanical and performance features of the complete new line of **Scotsman Super Cuber automatic ice machines** and the **Scotsman Super Flaker crushed ice machines** are discussed in six-page brochures available from the American Gas Machine Co., Division of Queen Stove Works, Inc., Albert Lea, Minn.

For more details circle #389 on mailing card.

• **Williamsburg-Created Fiberglas Draperies** is the subject of the new booklet issued by Williamsburg Drapery Co., Inc., 819 W. Chicago Ave., Chicago 22. The booklet illustrates, describes and gives specifications of drapery patterns, heavy-duty stage and drapery hardware and audio-visual darkening draperies.

For more details circle #390 on mailing card.

• The application of **"Color Corrected Mercury Vapor Lighting for Indoor Sports and Assembly Areas"** is discussed in a 16 page booklet with that title. Copies are available from Holophane Company, Inc., 342 Madison Ave., New York 17.

For more details circle #391 on mailing card.

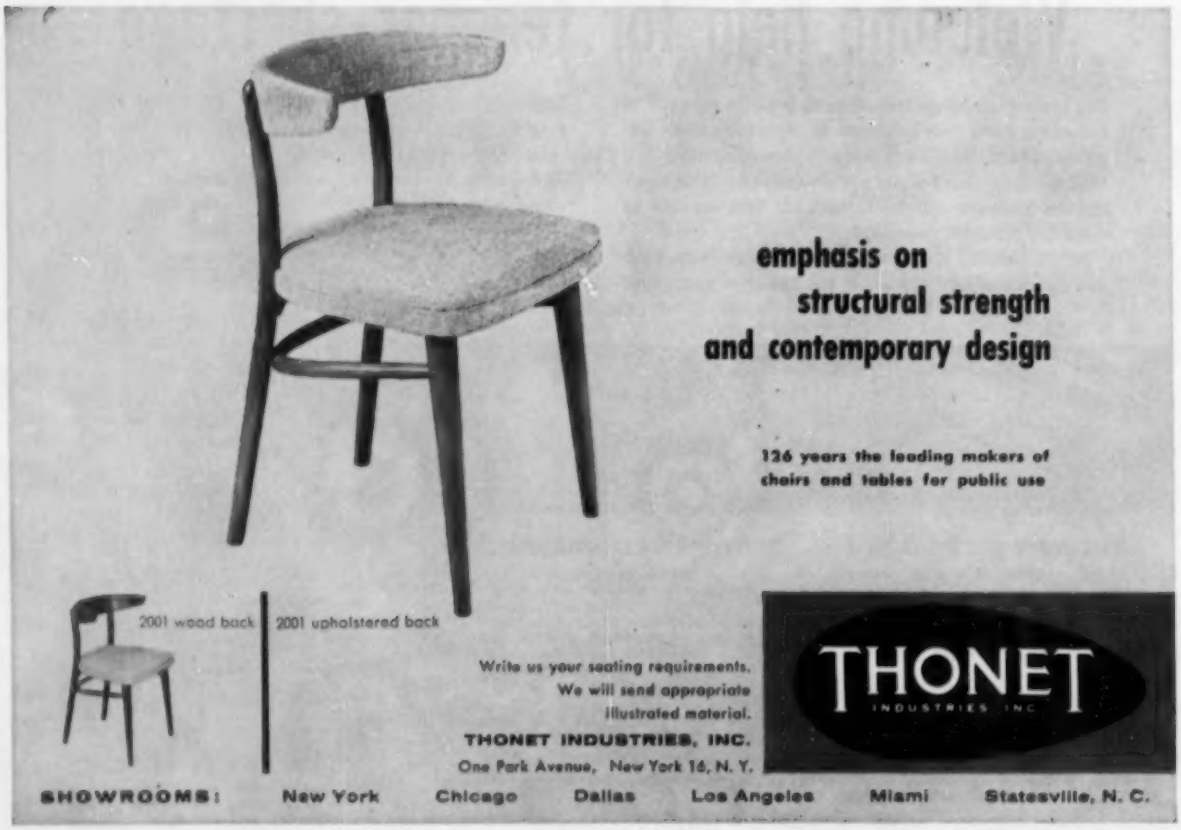
• **"The 3 R's and Daylighting"** is the title given to a special book prepared by Howard F. Kingsbury of the Daylighting Research Center and available from Pittsburgh Corning Corp., One Gateway Center, Pittsburgh 22, Pa. The booklet discusses the highly involved subject of the classroom and its effect on child development.

For more details circle #392 on mailing card.

Suppliers' News

Dunham-Bush, Inc., is the new name of the firm formed by the recent consolidation of the **C. A. Dunham Company,** formerly of **400 W. Madison St., Chicago 6,** manufacturer of heating and ventilating equipment, and the **Bush Manufacturing Co., West Hartford 10, Conn.** The new address of the consolidated organization will be **West Hartford 10, Conn.**

Burroughs Corporation, Detroit 32, Mich., manufacturer of office machines, computors and microfilm equipment, announces the opening of its **Mid-America Exhibit Center at 324 S. Michigan Ave., Chicago 4.** The attractive, modern center serves as an exhibit space for Burroughs equipment for modern business and institutional office and research accounting, has a fully equipped audio-visual room and demonstration and sales rooms.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It's always a great advantage to plan your choice of equipment with Hobart – to consolidate your purchasing and servicing. It saves time and trouble, gives better results, and delivers both individual and overall economies (as in interchangeability features). Many Hobart products, such as food cutters and mixers, can be used to great advantage in more than one "quarter".

You get the widest coverage of products in the industry, including food waste disposers and food, kitchen, bakery and dishwashing machines. (Full line only partially illustrated.) You get the most models, for greatest individual efficiency in size and capacity. And they're **Hobart** machines, backed by an unparalleled engineering reputation, a guarantee and service facilities known and respected everywhere . . . **The Hobart Manufacturing Company, Troy, Ohio.**

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SMU Student Center Enjoys All-Weather Comfort, Year 'round Economy with Johnson Control

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This particular type of building requires a control system that is capable of solving a wide variety of problems affecting comfort. Differences in room types and sizes are important considerations. These include, for example, a ballroom, a dining room, a cafeteria, a bowling alley, lounges. The control system must provide fast, accurate compensation for sudden changes in occupancy levels. It also must be responsive to the effects of sun and outdoor temperatures.

Johnson Control makes it possible to solve every one of these problems simply, successfully and economically. A modern double duct air conditioning system, 14 air conditioning units and a radiant panel system operate under the efficient directions of nearly 80 Johnson Room Thermostats. The temperature of each individual room is matched to the exact comfort requirements of the occupants at all times.

Main Lounge, Umphrey Lee Student Center, Southern Methodist University, Dallas. Pierce & Pierce, architects, Dallas; Zumwalt & Vinther, mechanical engineers, Dallas.

Operation of all heating and cooling equipment is automatically regulated to limit output to actual needs. Heating and cooling waste is eliminated. Johnson Control saves money in other important ways, too. The need for supervision and maintenance of pneumatic control systems is much less than that required for other types of control.

The exceptional comfort and economy features of Johnson Control can be applied to any new or existing building. Through a nearby Johnson engineer, you can get the benefits of Johnson experience in successfully solving the temperature regulation problems of thousands of the nation's best college and university buildings. His recommendations are yours without obligation. Johnson Service Company, Milwaukee 1, Wisconsin. Direct Branch Offices in Principal Cities.

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